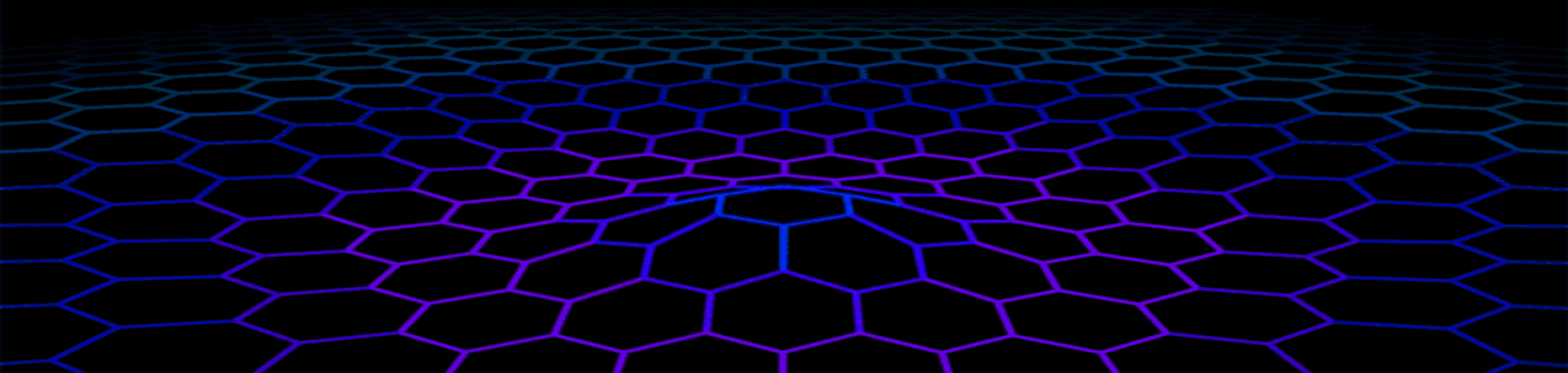


# Sistemas Operacionais

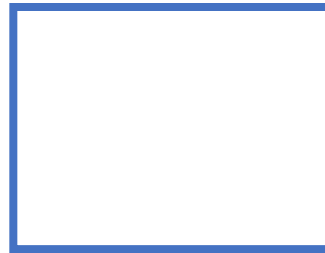


Correção dos exercícios da Semana anterior

# Soma de dois números

Escreva um programa para somar o valor contido em 2 variáveis que estão nos endereços 131 e 132, e armazenar o resultado no endereço 140.

LIN	COMANDO
0	LDA 131
2	ADD 132
4	STA 140
6	HLT



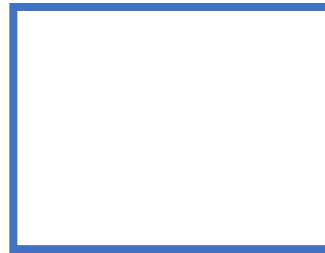
AC

LIN	VALOR
131	5
132	7
133	
134	
135	
136	
137	
138	
139	
140	

# Subtração de dois números

Faça um programa para subtrair o valor contido em 2 variáveis que estão nos endereços 131 e 132, e armazenar o resultado no endereço 140.

LIN	COMANDO
0	LDA 131
2	SUB 132
4	STA 140
6	HLT



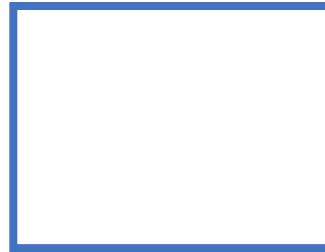
AC

LIN	VALOR
131	15
132	5
133	
134	
135	
136	
137	
138	
139	
140	

# Soma de três números

Faça um programa para somar o conteúdo dos endereços 131, 132 e 133 e armazenar o resultado no endereço 140.

LIN	COMANDO
0	LDA 131
2	ADD 132
4	ADD 133
6	STA 140
8	HLT



AC

LIN	VALOR
131	5
132	7
133	3
134	
135	
136	
137	
138	
139	
140	

# Multiplicar dois números

Faça um programa para multiplicar 2 variáveis que estão nos endereços 131 e 132, e armazenar o resultado no endereço 140.

LIN	COMANDO
0	LDA 132
2	STA 135
4	LDA 140
6	ADD 131
8	STA 140
10	LDA 135
12	SUB 136
14	STA 135
16	JZ 20
18	JMP 4
20	HTL



AC

LIN	VALOR
131	3
132	2
133	
134	
135	
136	1
137	
138	
139	
140	

# Menor de três

Faça um programa que identifique o menor valor dentre três variáveis. O resultado (o menor valor) deve ser armazenado na posição R. As variáveis e o resultado devem estar dispostos segundo o mapa de memória: 131: X 132: Y 133: Z 140: R

LIN	COMANDO
0	LDA 131
2	SUB 132
4	JP 18
6	LDA 131
8	SUB 133
10	JP 18
12	LDA 131
14	STA 140
16	JMP 34
18	LDA 132

LIN	COMANDO
20	SUB 133
22	JP 30
24	LDA 132
26	STA 140
28	JMP 34
30	LDA 133
32	STA 140
34	HTL



AC

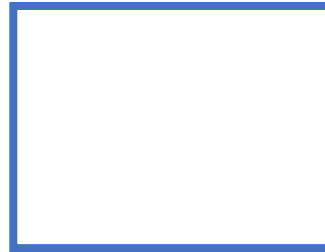
LIN	VALOR
131	5
132	7
133	3
134	
135	
136	
137	
138	
139	
140	

# Maior de três

Faça um programa que identifique o maior valor dentre três variáveis. O resultado (o maior valor) deve ser armazenado na posição R. As variáveis e o resultado devem estar dispostos segundo o mapa de memória: 131: X 132: Y 133: Z 140: R

LIN	COMANDO
0	LDA 131
2	SUB 132
4	JN 18
6	LDA 131
8	SUB 133
10	JN 18
12	LDA 131
14	STA 140
16	JMP 34
18	LDA 132

LIN	COMANDO
20	SUB 133
22	JN 30
24	LDA 132
26	STA 140
28	JMP 34
30	LDA 133
32	STA 140
34	HTL



AC

LIN	VALOR
131	5
132	7
133	3
134	
135	
136	
137	
138	
139	
140	



# Complemento de 2 – Teoria

Como representar números negativos?

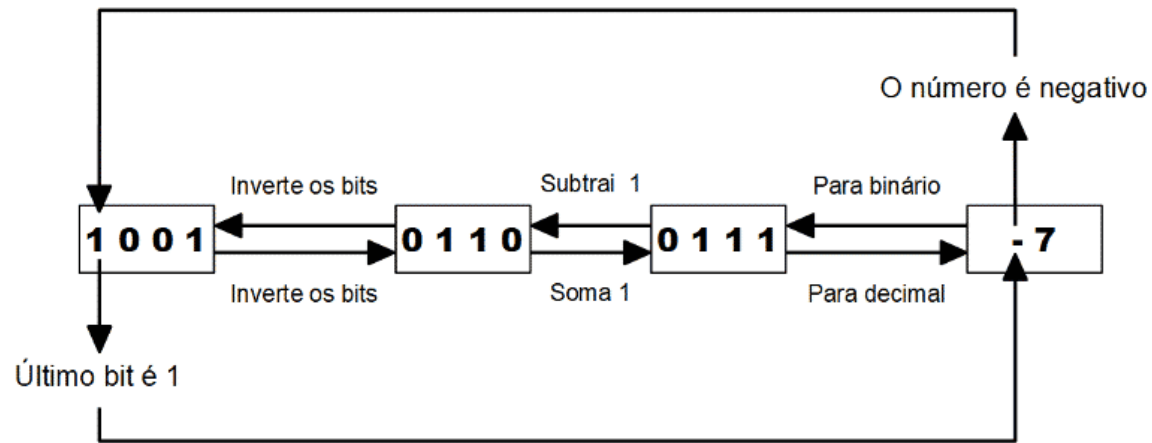
Uma das formas de representar números negativos e positivos utilizando números binários é através do complemento de dois.

Para obter a representação negativa de um número **binário**:

- 1) **Inverter** todos os **bits** do número;
- 2) **Somar 1**.

Em complemento de 2, sempre que o número for negativo, o bit mais significativo (MSB, ou bit mais à esquerda) será 1. Caso contrário, o número é positivo.

# Complemento de 2



$$\begin{array}{r} 42 \quad 00101010 \\ \hline 11010101 \\ + 00000001 \\ \hline \hline -42 \quad 11010110 \end{array}$$

BIN	DEC	OCT	HEX	Comp. 2
0000	0	0	0	0
0001	1	1	1	1
0010	2	2	2	2
0011	3	3	3	3
0100	4	4	4	4
0101	5	5	5	5
0110	6	6	6	6
0111	7	7	7	7
1000	8	10	8	-8
1001	9	11	9	-7
1010	10	12	A	-6
1011	11	13	B	-5
1100	12	14	C	-4
1101	13	15	D	-3
1110	14	16	E	-2
1111	15	17	F	-1

BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2	
00000000	0	0	0	0		00100000	32	40	20	32		01000000	64	100	40	64		01100000	96	140	60	96	
00000001	1	1	1	1		00100001	33	41	21	33		01000001	65	101	41	65		01100001	97	141	61	97	
00000010	2	2	2	2		00100010	34	42	22	34		01000010	66	102	42	66		01100010	98	142	62	98	
00000011	3	3	3	3		00100011	35	43	23	35		01000011	67	103	43	67		01100011	99	143	63	99	
00000100	4	4	4	4		00100100	36	44	24	36		01000100	68	104	44	68		01100100	100	144	64	100	
00000101	5	5	5	5		00100101	37	45	25	37		01000101	69	105	45	69		01100101	101	145	65	101	
00000110	6	6	6	6		00100110	38	46	26	38		01000110	70	106	46	70		01100110	102	146	66	102	
00000111	7	7	7	7		00100111	39	47	27	39		01000111	71	107	47	71		01100111	103	147	67	103	
00001000	8	10	8	8		00101000	40	50	28	40		01001000	72	110	48	72		01101000	104	150	68	104	
00001001	9	11	9	9		00101001	41	51	29	41		01001001	73	111	49	73		01101001	105	151	69	105	
00001010	10	12	A	10		00101010	42	52	2A	42		01001010	74	112	4A	74		01101010	106	152	6A	106	
00001011	11	13	B	11		00101011	43	53	2B	43		01001011	75	113	4B	75		01101011	107	153	6B	107	
00001100	12	14	C	12		00101100	44	54	2C	44		01001100	76	114	4C	76		01101100	108	154	6C	108	
00001101	13	15	D	13		00101101	45	55	2D	45		01001101	77	115	4D	77		01101101	109	155	6D	109	
00001110	14	16	E	14		00101110	46	56	2E	46		01001110	78	116	4E	78		01101110	110	156	6E	110	
00001111	15	17	F	15		00101111	47	57	2F	47		01001111	79	117	4F	79		01101111	111	157	6F	111	
00010000	16	20	10	16		00110000	48	60	30	48		01010000	80	120	50	80		01110000	112	160	70	112	
00010001	17	21	11	17		00110001	49	61	31	49		01010001	81	121	51	81		01110001	113	161	71	113	
00010010	18	22	12	18		00110010	50	62	32	50		01010010	82	122	52	82		01110010	114	162	72	114	
00010011	19	23	13	19		00110011	51	63	33	51		01010011	83	123	53	83		01110011	115	163	73	115	
00010100	20	24	14	20		00110100	52	64	34	52		01010100	84	124	54	84		01110100	116	164	74	116	
00010101	21	25	15	21		00110101	53	65	35	53		01010101	85	125	55	85		01110101	117	165	75	117	
00010110	22	26	16	22		00110110	54	66	36	54		01010110	86	126	56	86		01110110	118	166	76	118	
00010111	23	27	17	23		00110111	55	67	37	55		01010111	87	127	57	87		01110111	119	167	77	119	
00011000	24	30	18	24		00111000	56	70	38	56		01011000	88	130	58	88		01111000	120	170	78	120	
00011001	25	31	19	25		00111001	57	71	39	57		01011001	89	131	59	89		01111001	121	171	79	121	
00011010	26	32	1A	26		00111010	58	72	3A	58		01011010	90	132	5A	90		01111010	122	172	7A	122	
00011011	27	33	1B	27		00111011	59	73	3B	59		01011011	91	133	5B	91		01111011	123	173	7B	123	
00011100	28	34	1C	28		00111100	60	74	3C	60		01011100	92	134	5C	92		01111100	124	174	7C	124	
00011101	29	35	1D	29		00111101	61	75	3D	61		01011101	93	135	5D	93		01111101	125	175	7D	125	
00011110	30	36	1E	30		00111110	62	76	3E	62		01011110	94	136	5E	94		01111110	126	176	7E	126	
00011111	31	37	1F	31		00111111	63	77	3F	63		01011111	95	137	5F	95		01111111	127	177	7F	127	

BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2		BIN	DEC	OCT	HEX	Comp. 2
10000000	128	200	80	-128		10100000	160	240	A0	-96		11000000	192	300	C0	-64		11100000	224	340	E0	-32
10000001	129	201	81	-127		10100001	161	241	A1	-95		11000001	193	301	C1	-63		11100001	225	341	E1	-31
10000010	130	202	82	-126		10100010	162	242	A2	-94		11000010	194	302	C2	-62		11100010	226	342	E2	-30
10000011	131	203	83	-125		10100011	163	243	A3	-93		11000011	195	303	C3	-61		11100011	227	343	E3	-29
10000100	132	204	84	-124		10100100	164	244	A4	-92		11000100	196	304	C4	-60		11100100	228	344	E4	-28
10000101	133	205	85	-123		10100101	165	245	A5	-91		11000101	197	305	C5	-59		11100101	229	345	E5	-27
10000110	134	206	86	-122		10100110	166	246	A6	-90		11000110	198	306	C6	-58		11100110	230	346	E6	-26
10000111	135	207	87	-121		10100111	167	247	A7	-89		11000111	199	307	C7	-57		11100111	231	347	E7	-25
10001000	136	210	88	-120		10101000	168	250	A8	-88		11001000	200	310	C8	-56		11101000	232	350	E8	-24
10001001	137	211	89	-119		10101001	169	251	A9	-87		11001001	201	311	C9	-55		11101001	233	351	E9	-23
10001010	138	212	8A	-118		10101010	170	252	AA	-86		11001010	202	312	CA	-54		11101010	234	352	EA	-22
10001011	139	213	8B	-117		10101011	171	253	AB	-85		11001011	203	313	CB	-53		11101011	235	353	EB	-21
10001100	140	214	8C	-116		10101100	172	254	AC	-84		11001100	204	314	CC	-52		11101100	236	354	EC	-20
10001101	141	215	8D	-115		10101101	173	255	AD	-83		11001101	205	315	CD	-51		11101101	237	355	ED	-19
10001110	142	216	8E	-114		10101110	174	256	AE	-82		11001110	206	316	CE	-50		11101110	238	356	EE	-18
10001111	143	217	8F	-113		10101111	175	257	AF	-81		11001111	207	317	CF	-49		11101111	239	357	EF	-17
10010000	144	220	90	-112		10110000	176	260	B0	-80		11010000	208	320	D0	-48		11110000	240	360	F0	-16
10010001	145	221	91	-111		10110001	177	261	B1	-79		11010001	209	321	D1	-47		11110001	241	361	F1	-15
10010010	146	222	92	-110		10110010	178	262	B2	-78		11010010	210	322	D2	-46		11110010	242	362	F2	-14
10010011	147	223	93	-109		10110011	179	263	B3	-77		11010011	211	323	D3	-45		11110011	243	363	F3	-13
10010100	148	224	94	-108		10110100	180	264	B4	-76		11010100	212	324	D4	-44		11110100	244	364	F4	-12
10010101	149	225	95	-107		10110101	181	265	B5	-75		11010101	213	325	D5	-43		11110101	245	365	F5	-11
10010110	150	226	96	-106		10110110	182	266	B6	-74		11010110	214	326	D6	-42		11110110	246	366	F6	-10
10010111	151	227	97	-105		10110111	183	267	B7	-73		11010111	215	327	D7	-41		11110111	247	367	F7	-9
10011000	152	230	98	-104		10111000	184	270	B8	-72		11011000	216	330	D8	-40		11111000	248	370	F8	-8
10011001	153	231	99	-103		10111001	185	271	B9	-71		11011001	217	331	D9	-39		11111001	249	371	F9	-7
10011010	154	232	9A	-102		10111010	186	272	BA	-70		11011010	218	332	DA	-38		11111010	250	372	FA	-6
10011011	155	233	9B	-101		10111011	187	273	BB	-69		11011011	219	333	DB	-37		11111011	251	373	FB	-5
10011100	156	234	9C	-100		10111100	188	274	BC	-68		11011100	220	334	DC	-36		11111100	252	374	FC	-4
10011101	157	235	9D	-99		10111101	189	275	BD	-67		11011101	221	335	DD	-35		11111101	253	375	FD	-3
10011110	158	236	9E	-98		10111110	190	276	BE	-66		11011110	222	336	DE	-34		11111110	254	376	FE	-2
10011111	159	237	9F	-97		10111111	191	277	BF	-65		11011111	223	337	DF	-33		11111111	255	377	FF	-1

# Subtração no Neander

Faça um programa para subtrair 2 variáveis que estão nos endereços 131 e 132, e armazenar o resultado no endereço 133.

LIN	COMANDO
0	LDA 132
2	NOT
3	ADD 134
5	ADD 131
7	STA 133
9	HLT



AC

	LIN	VALOR
X	131	
	132	
	133	
	134	1
Y		
Z		
R	140	





# Virtualização

- Metodologia que permite dividir um único computador físico em vários computadores virtuais, independentes entre si.

# Histórico

1960 – IBM introduz o conceito de "Time Sharing" (Compartilhamento de Tempo) aplicado inicialmente em Mainframes

1988 – Empresa Connectix Corporation lançou o produto Connectix Virtual PC 1.0 para MAC. Permitia traduzir instruções Intel x86 virtual para um processador físico PowerPC (Apple Macintosh)

1998 – Foi fundada a VMWare baseada em tecnologias de virtualização patenteada em projetos na Stanford University.

2003 – Microsoft entra no campo de virtualização com aquisição dos direitos sobre a Connectix


2003 – Desenvolvimento do XEN – Projeto inicialmente desenvolvido dentro da Universidade de Cambridge

# Histórico

2004 – Microsoft lança seu primeiro produto de virtualização: Microsoft Virtual Server 2005




2006 – Liberada a versão Xen Enterprise 3.0 para concorrer diretamente com o Vmware ESX



2007 – Microsoft Lança o Microsoft Virtual PC



2007 – A Citrix adquire a XenSource por U\$ 500 milhões

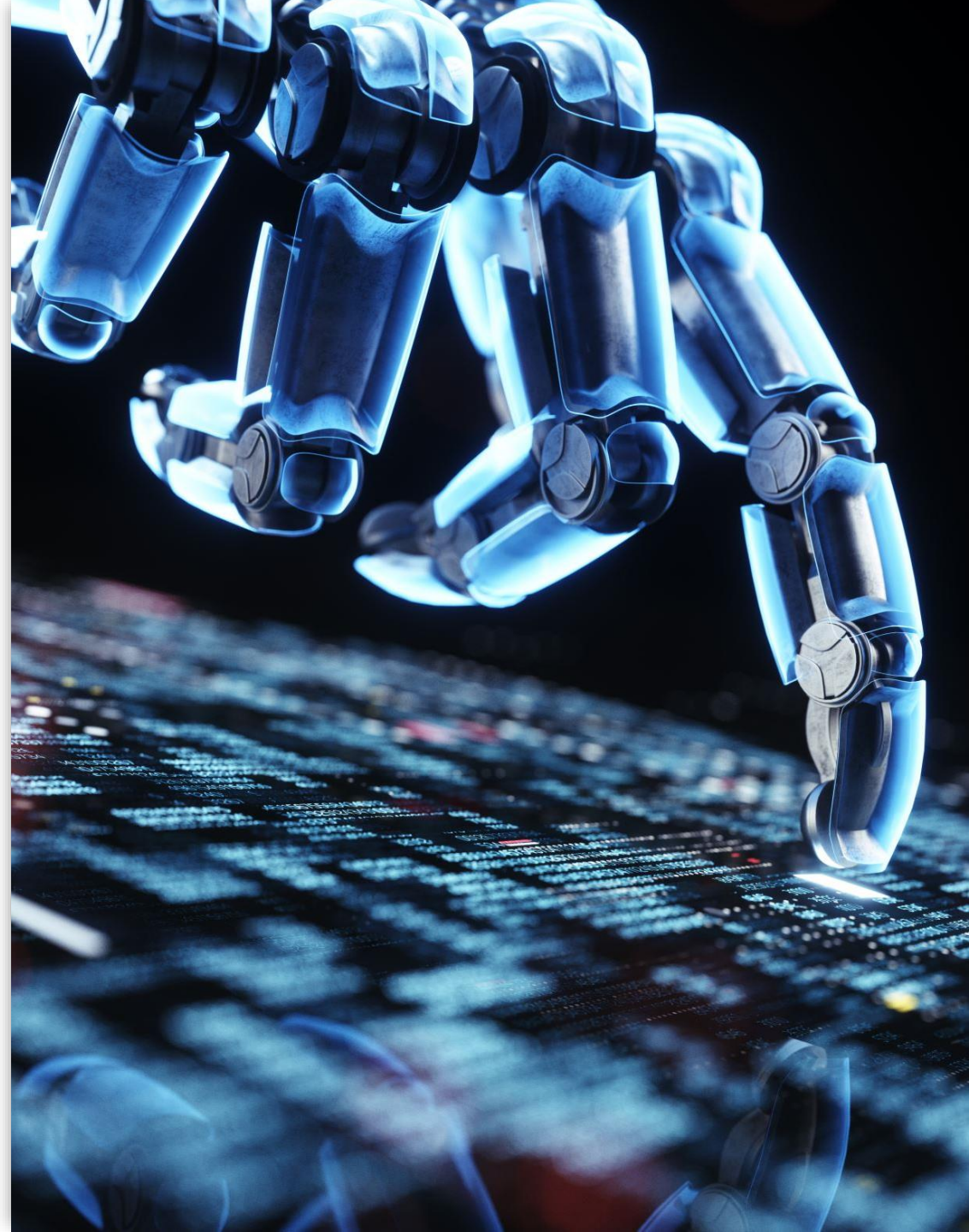


2008 – Juntamente com o lançamento do Windows Server 2008, Microsoft Lança Hyper-V (Plataforma de virtualização para servidores)



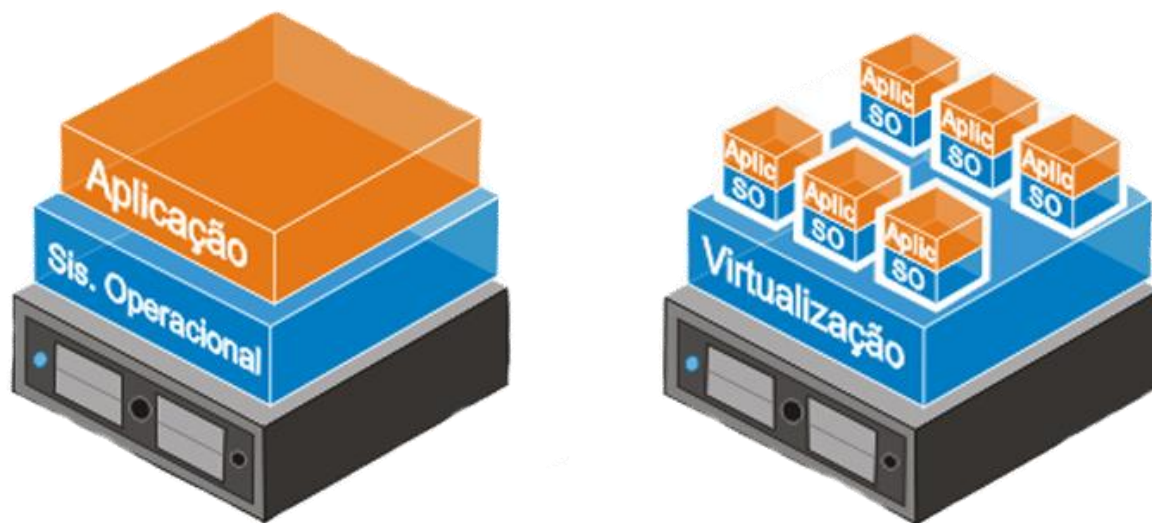
# Virtualização

- **Máquina Virtual**
  - É uma máquina, implementada através de *software*, que executa programas como um computador real, também chamado de processo de virtualização.
  - Máquinas virtuais são extremamente úteis no dia a dia, pois permitem ao usuário rodar outros sistemas operacionais dentro de uma janela, tendo acesso à todos os softwares que precisa.



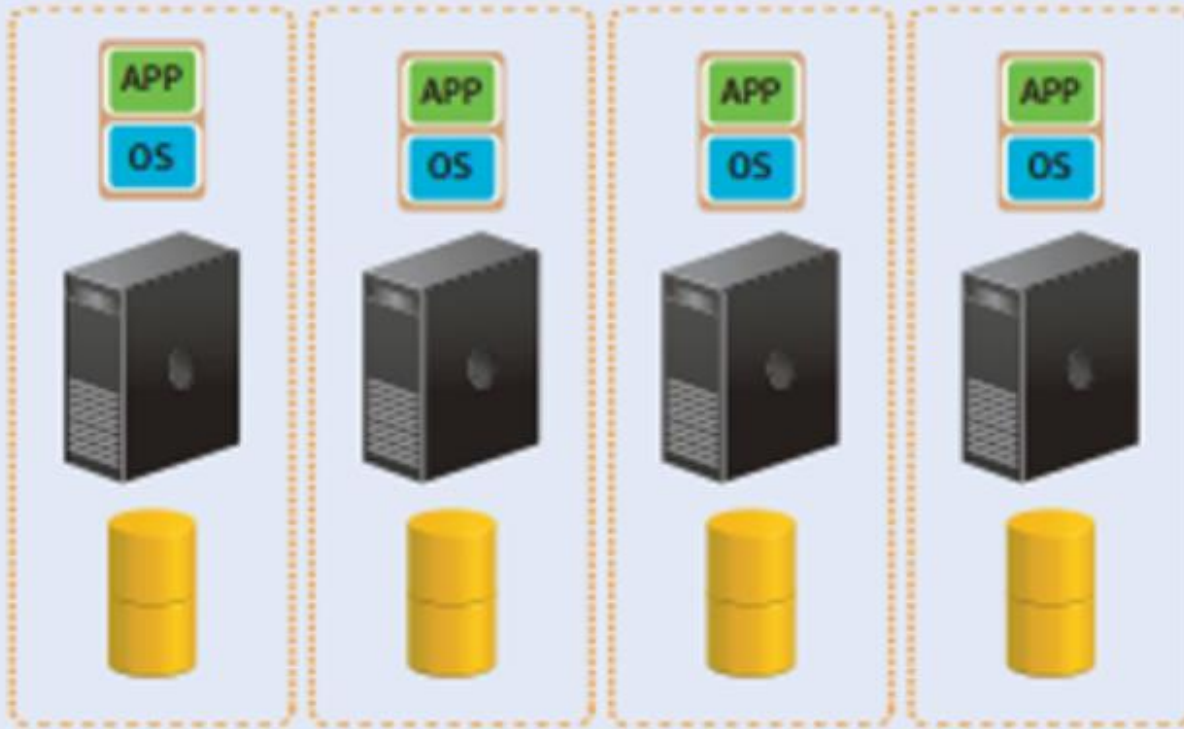
# Definição de Virtualização

Camada entre Hardware e Sistema Operacional



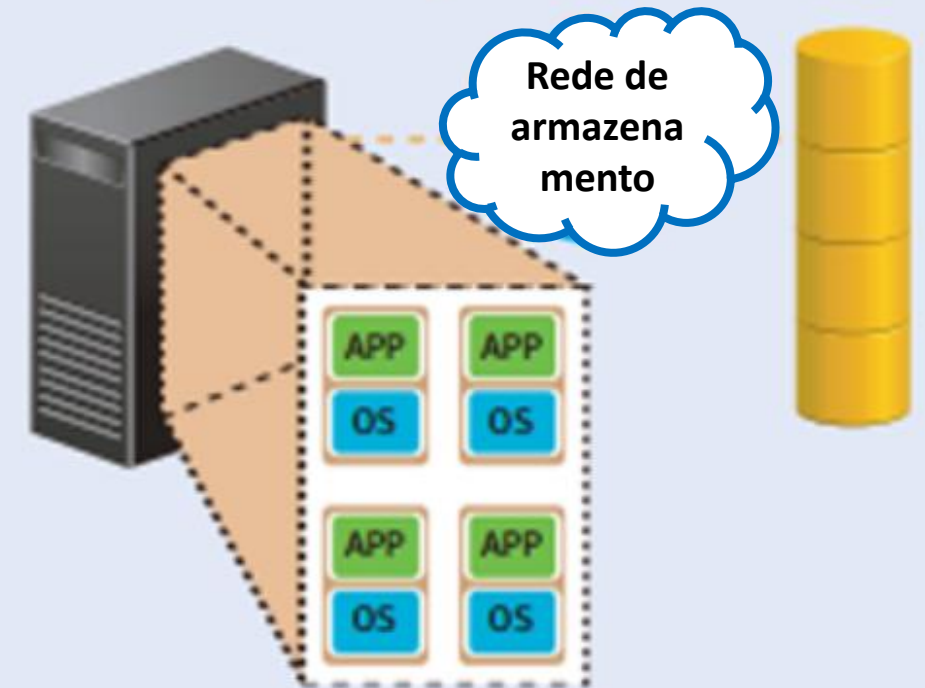
# Definição de Virtualização

## Sem virtualização



**Os aplicativos são dedicados a um hardware de servidor específico.**

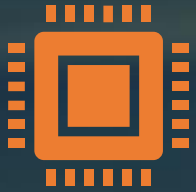
## Com virtualização



**Os aplicativos residem em computadores virtuais que compartilham os recursos de armazenamento e de computadores**



# Componentes básicos



## Sistema hospedeiro (host)

É responsável por gerenciar o hardware físico e as máquinas virtuais.



## Sistema convidado (guest)

São os sistemas operacionais virtualizados.



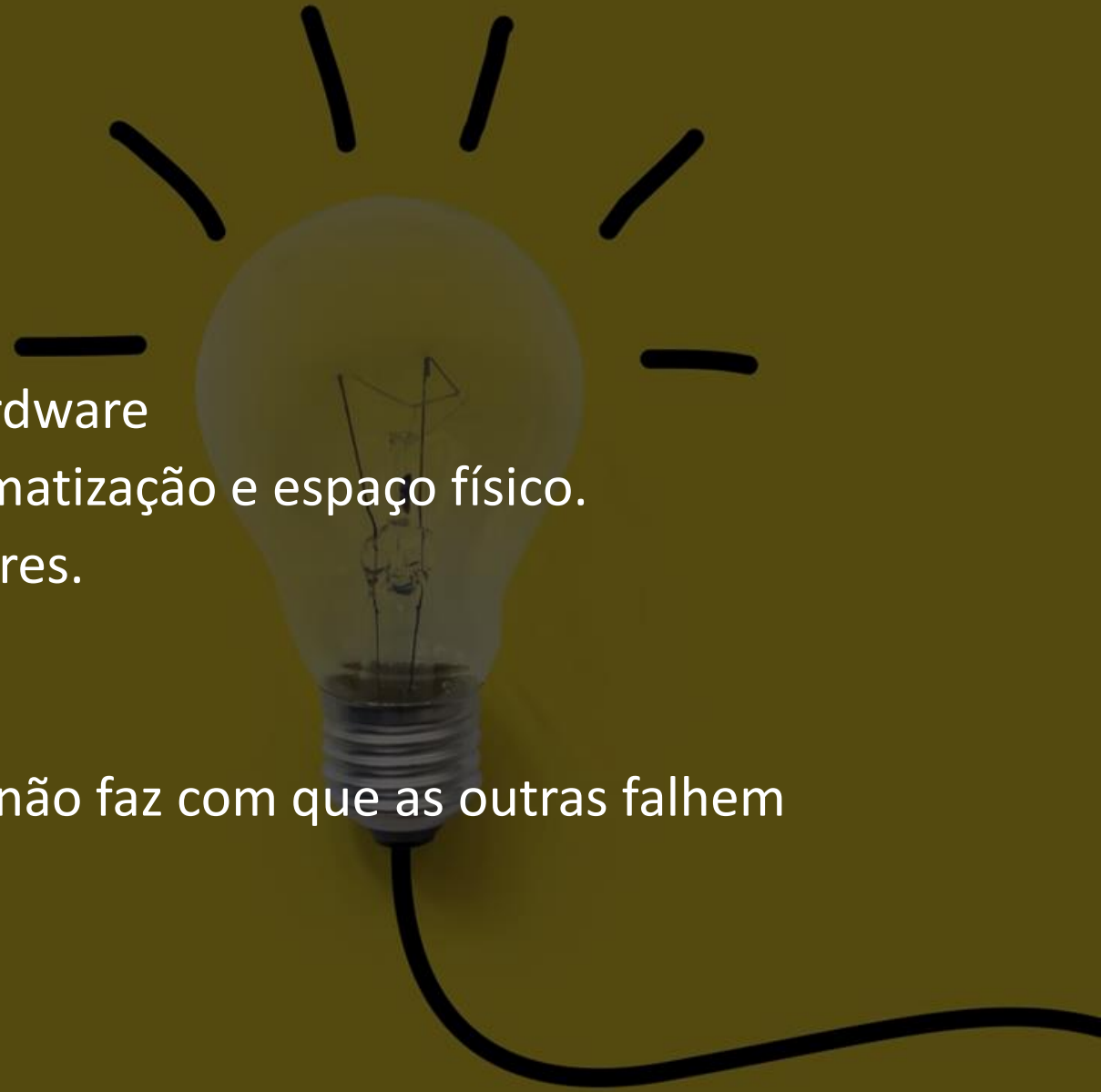
## Armazenamento (storage)

Hospedagem centralizada das VMs

# Virtualização

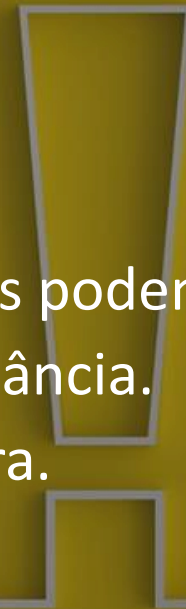
- **Cenários de aplicação (vantagens)**

- Aproveitamento da capacidade do hardware
- Economia no consumo de energia, climatização e espaço físico.
- Agilidade na administração de servidores.
- Uso de sistemas legados.
- Uso acadêmico.
- A falha de uma das máquinas virtuais não faz com que as outras falhem também.



# Virtualização

- **Cenários de aplicação (desvantagens)**
  - Na falha de um servidor hospedeiro, diversos serviços podem parar.
  - Aumento no custo de soluções que forneçam redundância.
  - Complexidade para o gerenciamento da infraestrutura.
  - Desempenho.



# Virtualização

## Algumas soluções de virtualização

- o Xen
- o VMware
- o Hyper-V
- o VirtualBox
- o OpenVZ
- o Proxmox
- o VirtualPC

# Máquinas Virtuais

Algumas soluções de virtualização



Arquitetura de máquinas virtuais



Exemplos de softwares utilizados

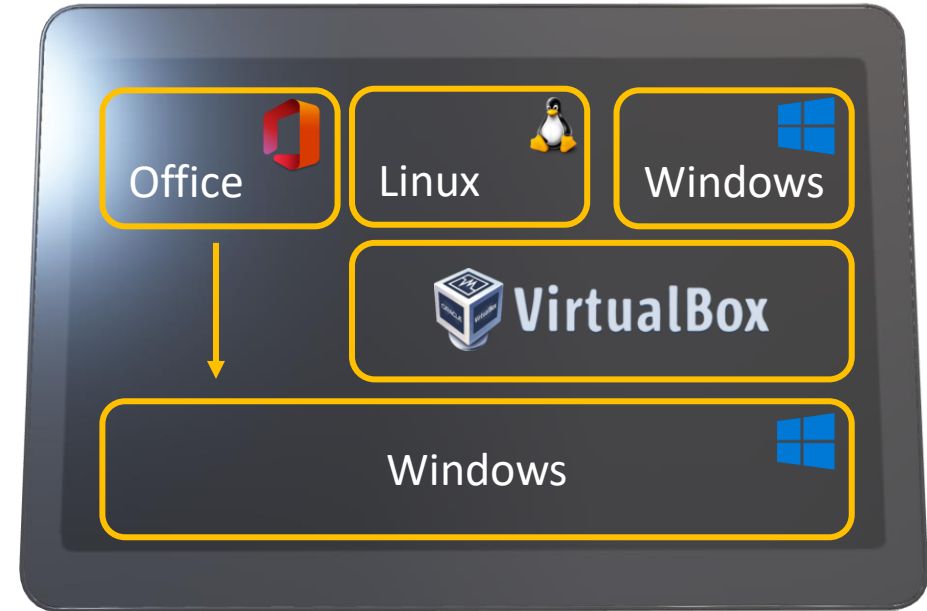


# Máquinas Virtuais

## Algumas soluções de virtualização



Arquitetura de máquinas virtuais



Exemplos de softwares utilizados



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File

Information

### VMware Workstation 16.2.3 Player for Windows 64-bit Operating Systems

File size: 584.21 MB

File type: exe

[Read More](#)

[DOWNLOAD NOW](#)

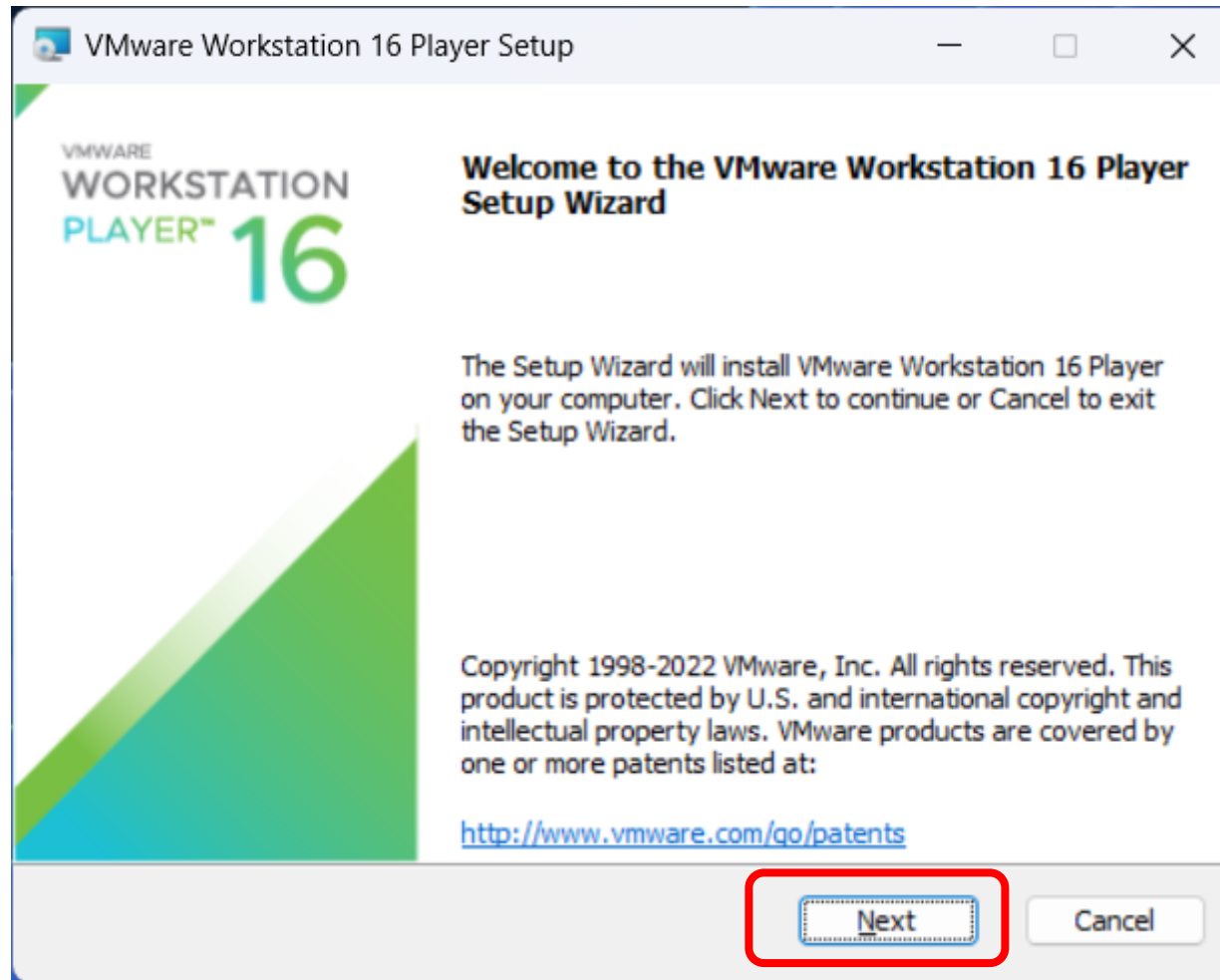
### VMware Workstation 16.2.3 Player for Linux 64-bit

File size: 508.49 MB

[DOWNLOAD NOW](#)

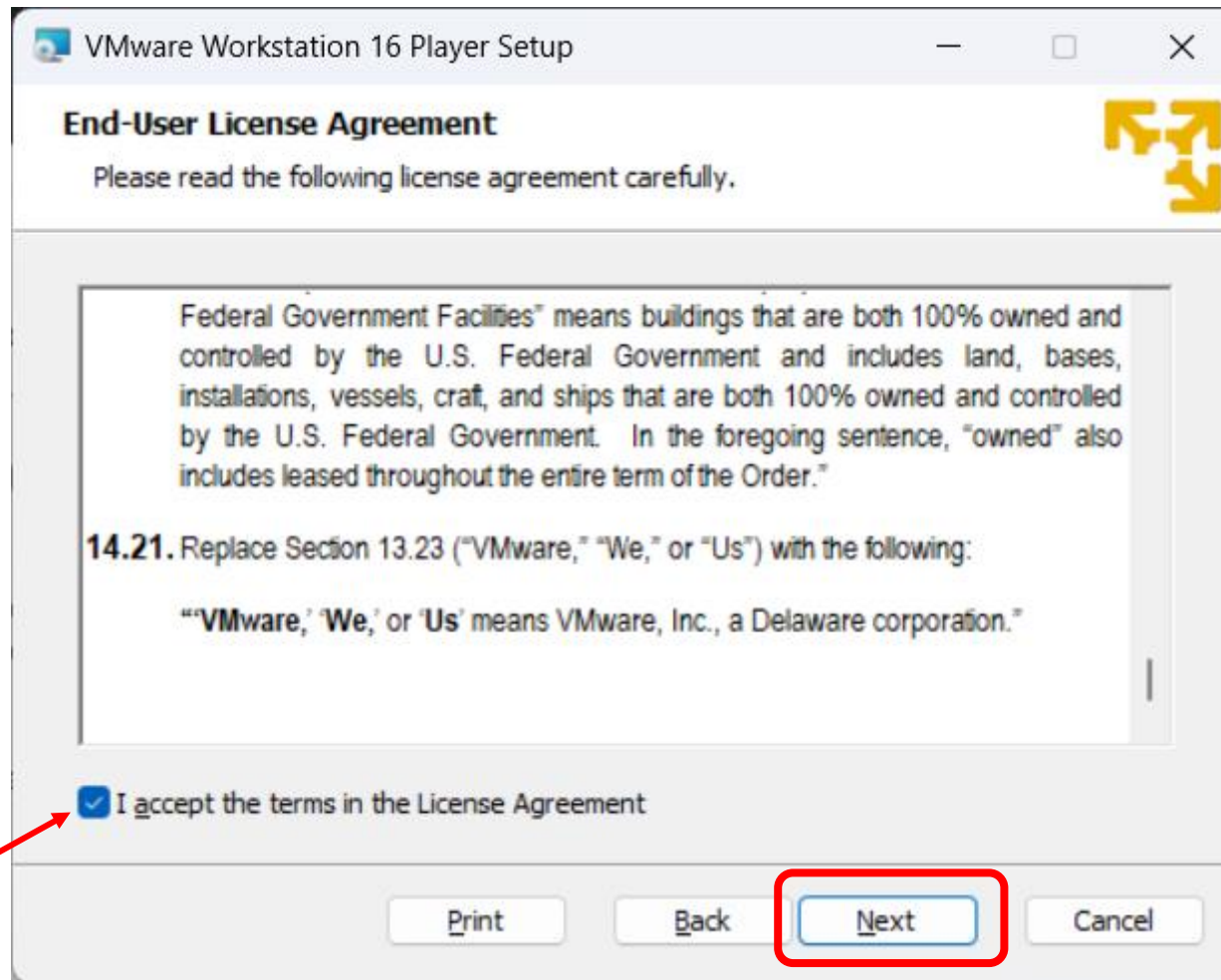
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



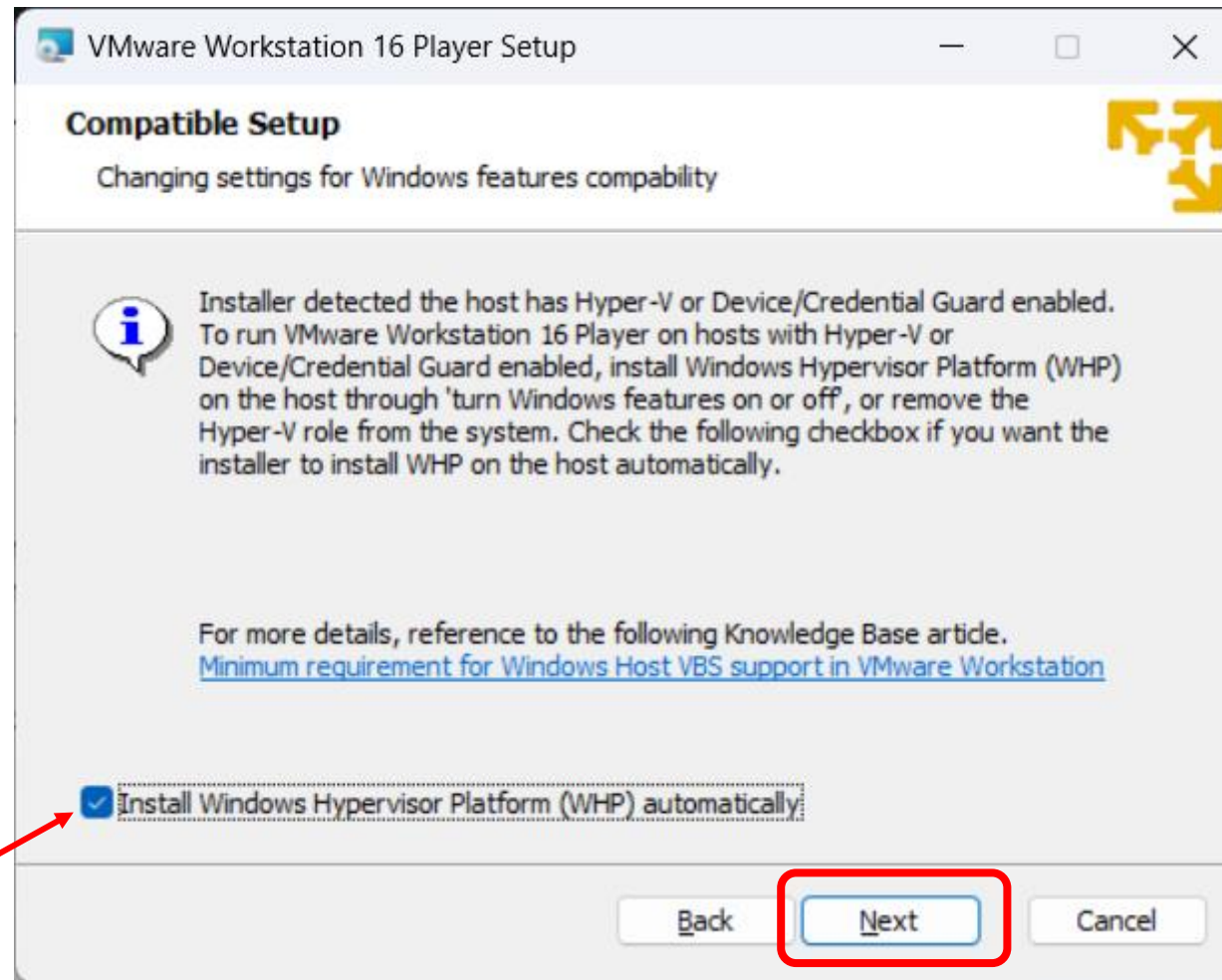
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



# VMware Workstation Player

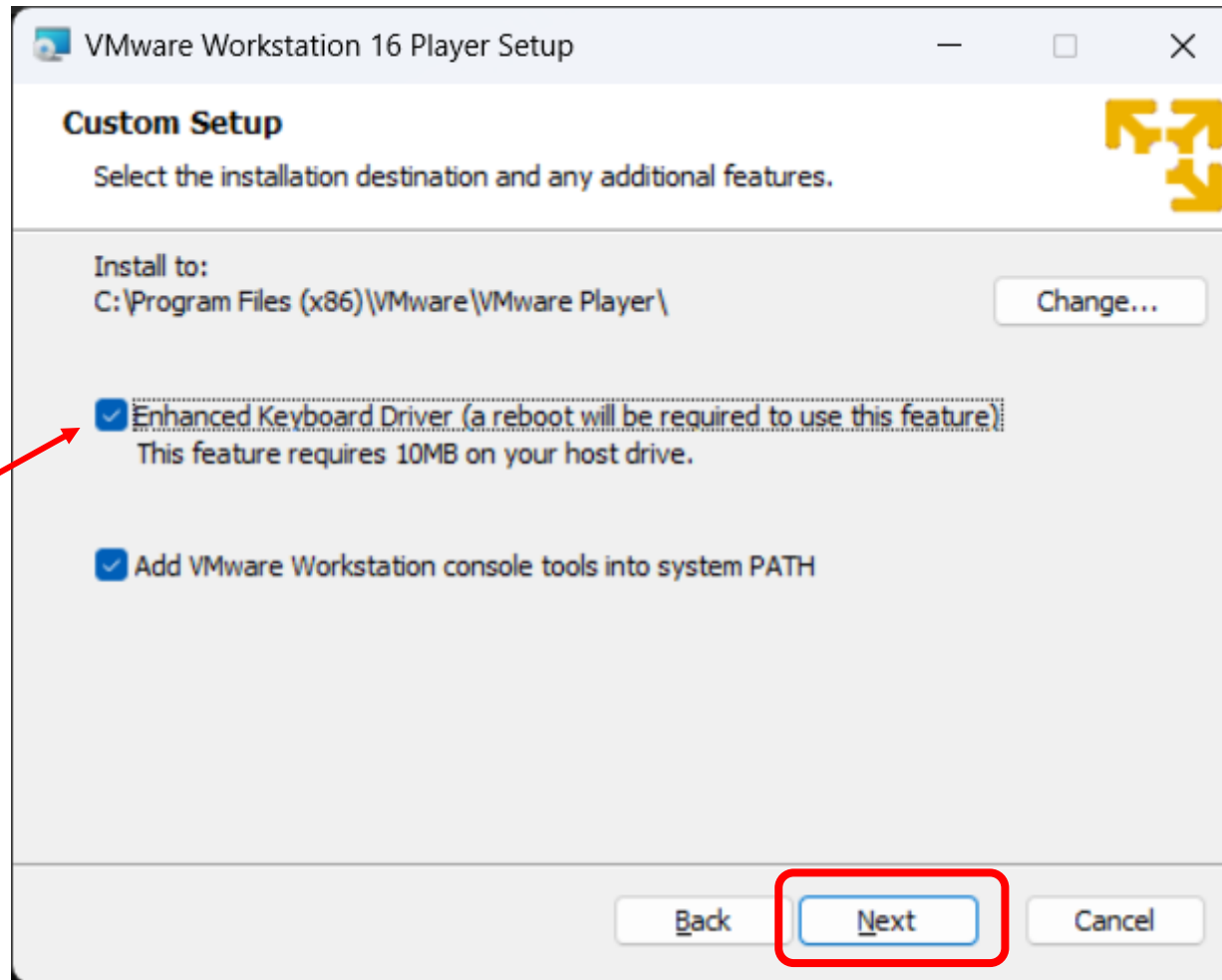
<https://www.vmware.com/products/workstation-player.html>



**Obs.:** Esta tela somente será exibida caso exista Hyper-V no sistema operacional em uso.

# VMware Workstation Player

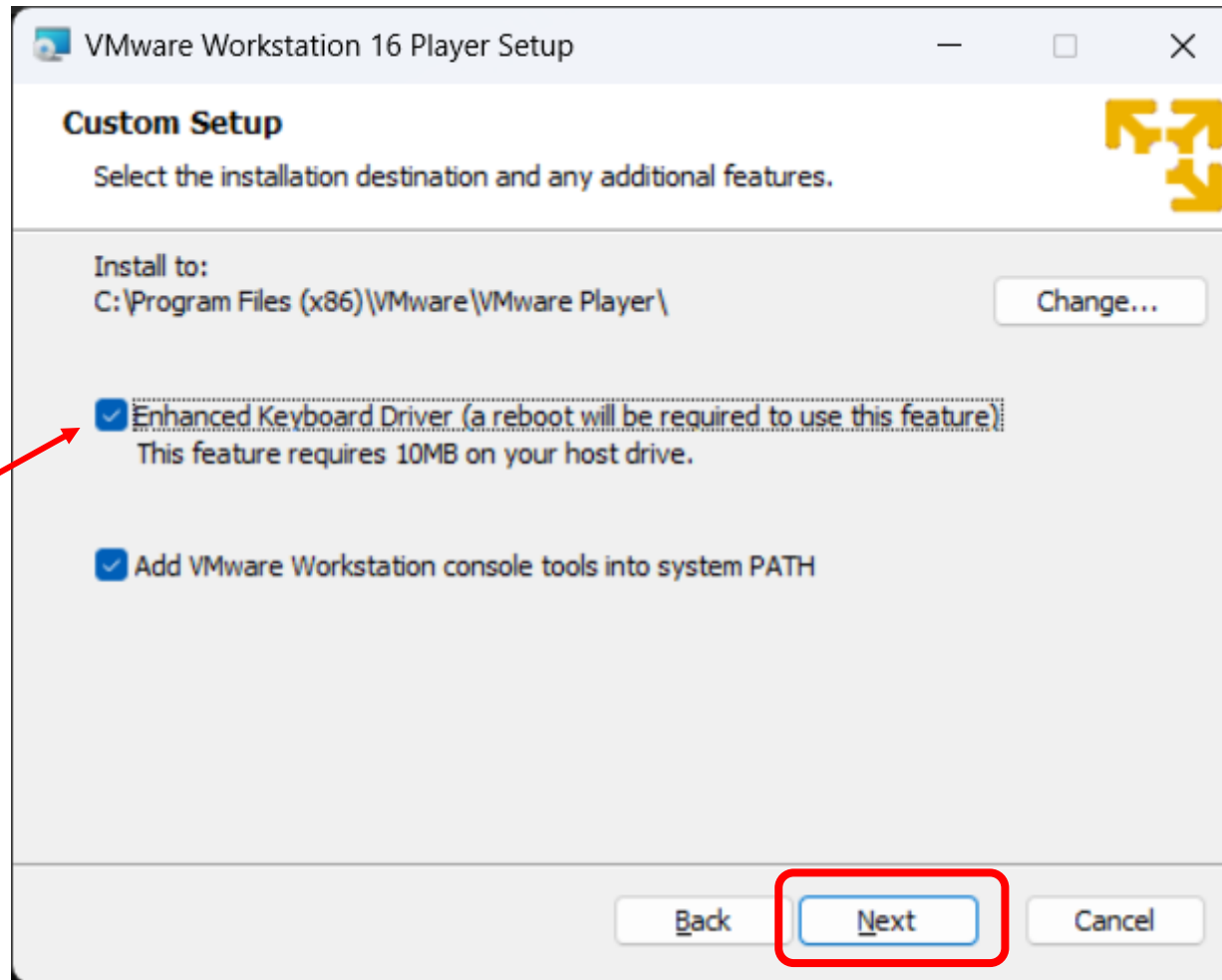
<https://www.vmware.com/products/workstation-player.html>





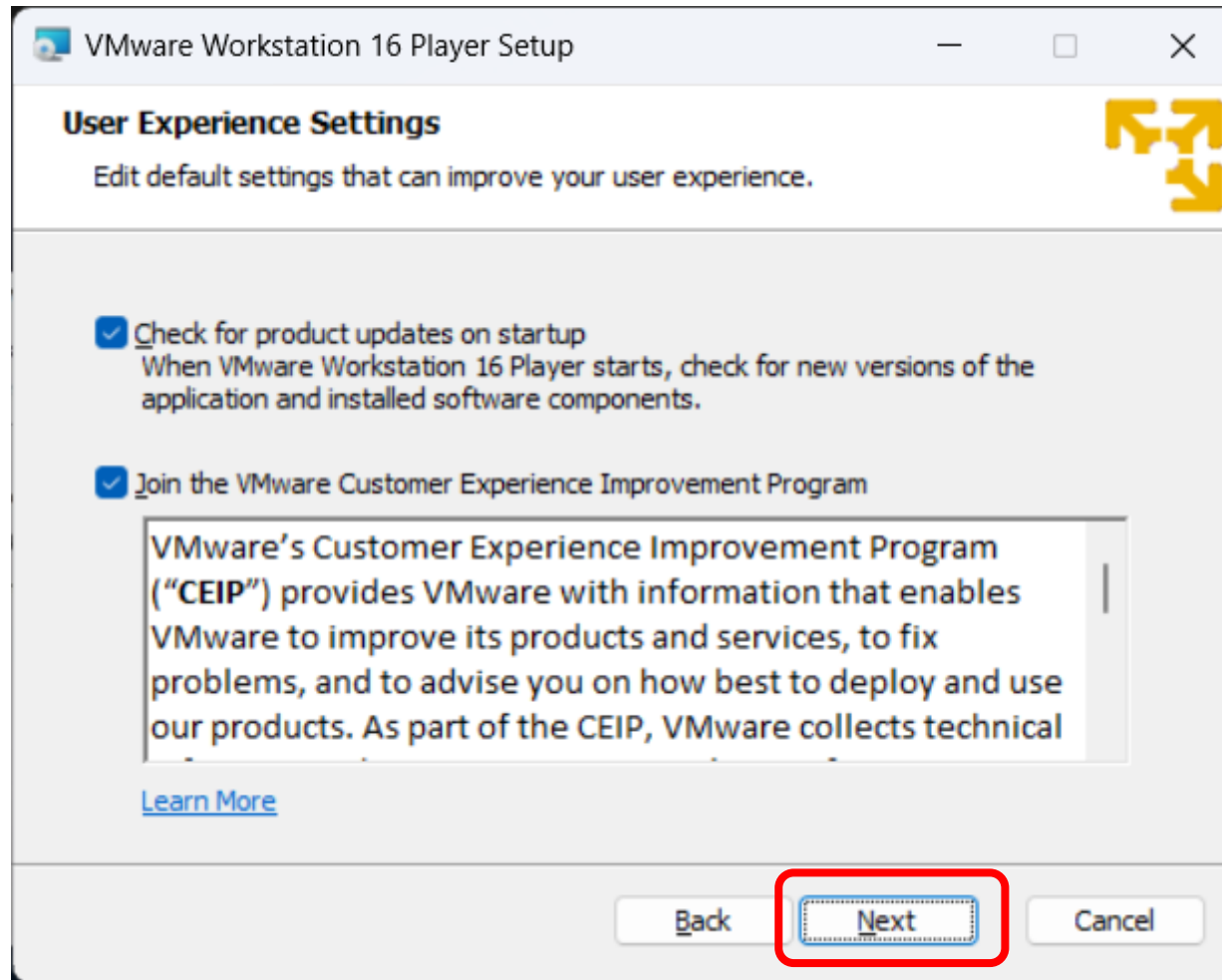
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



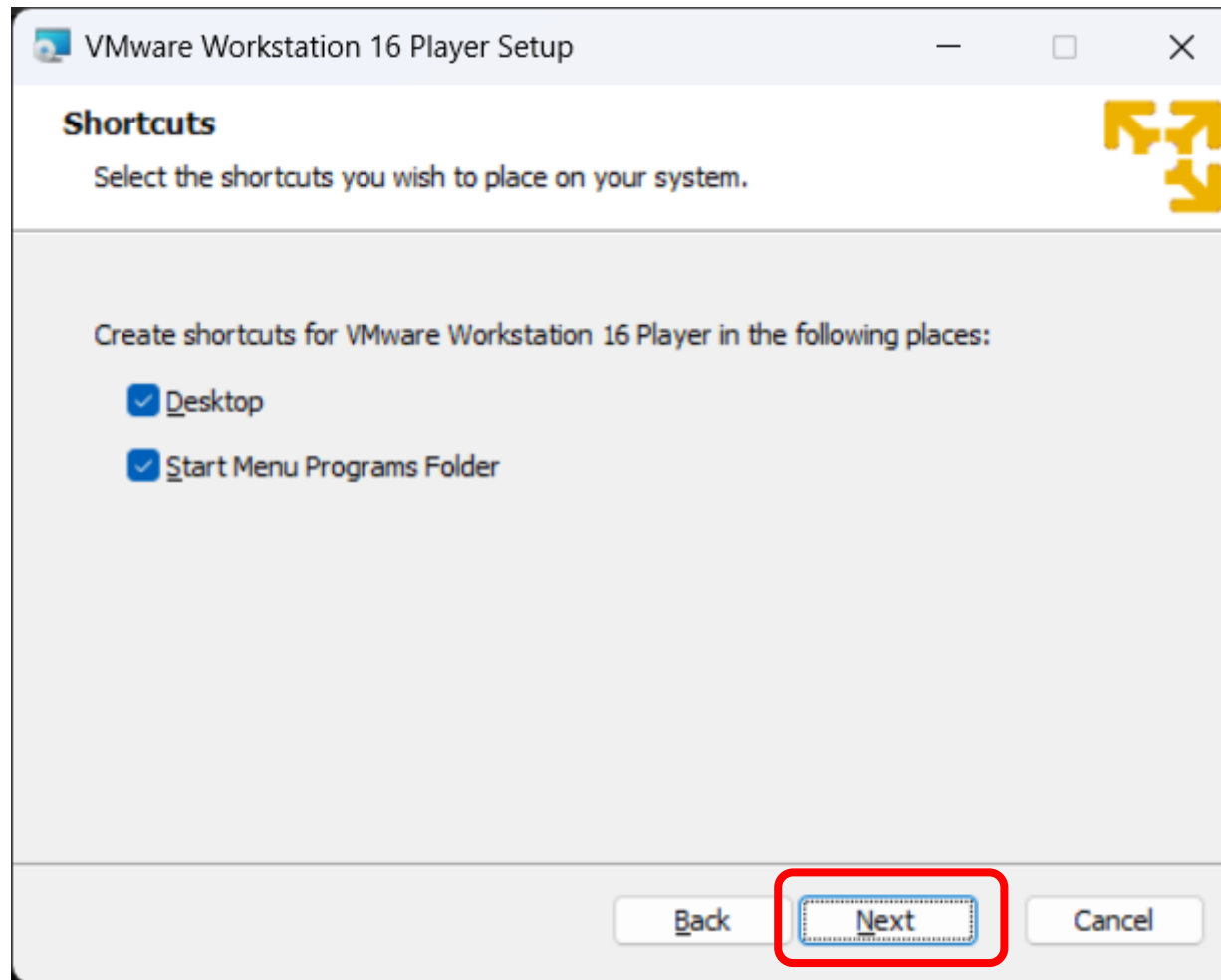
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



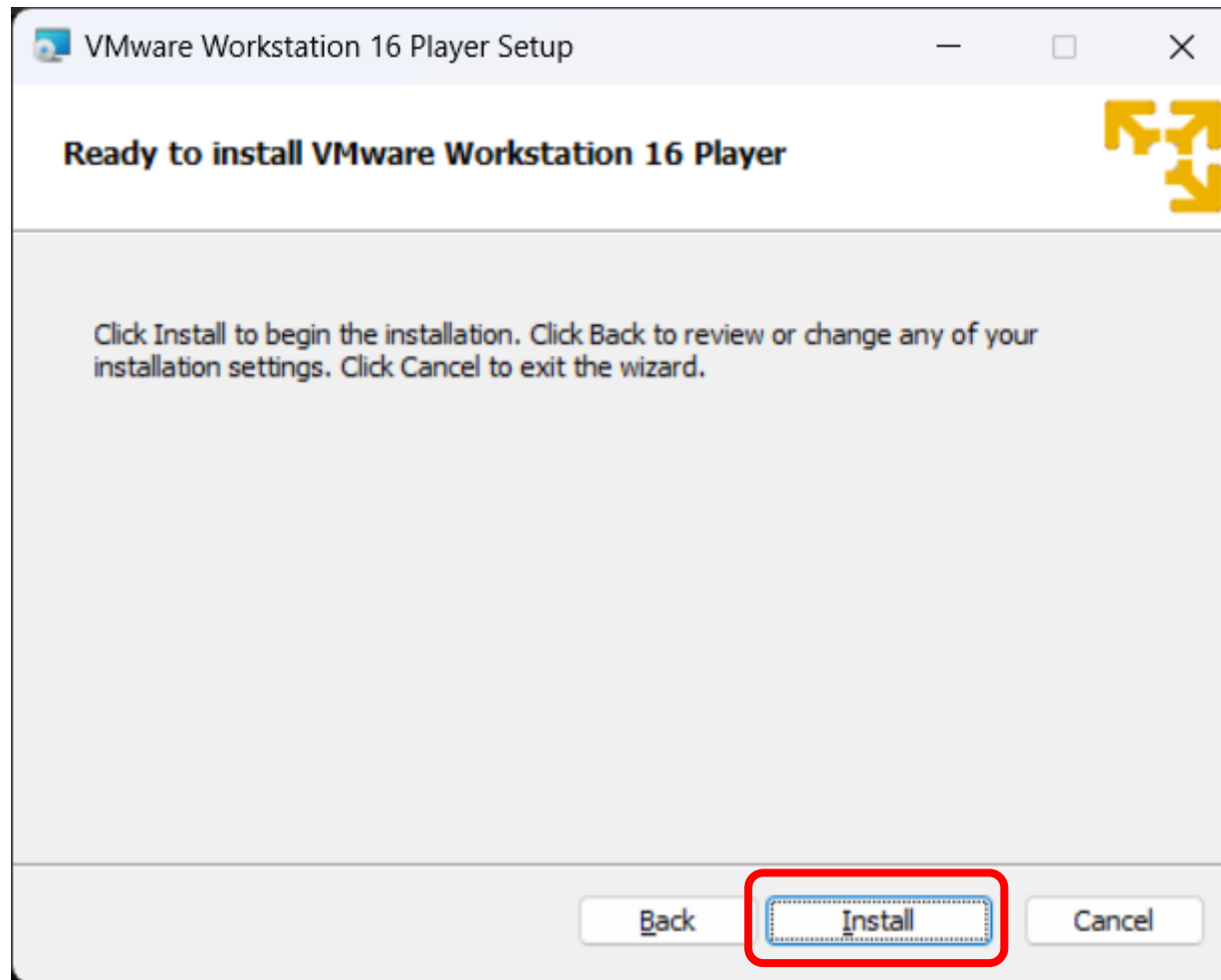
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



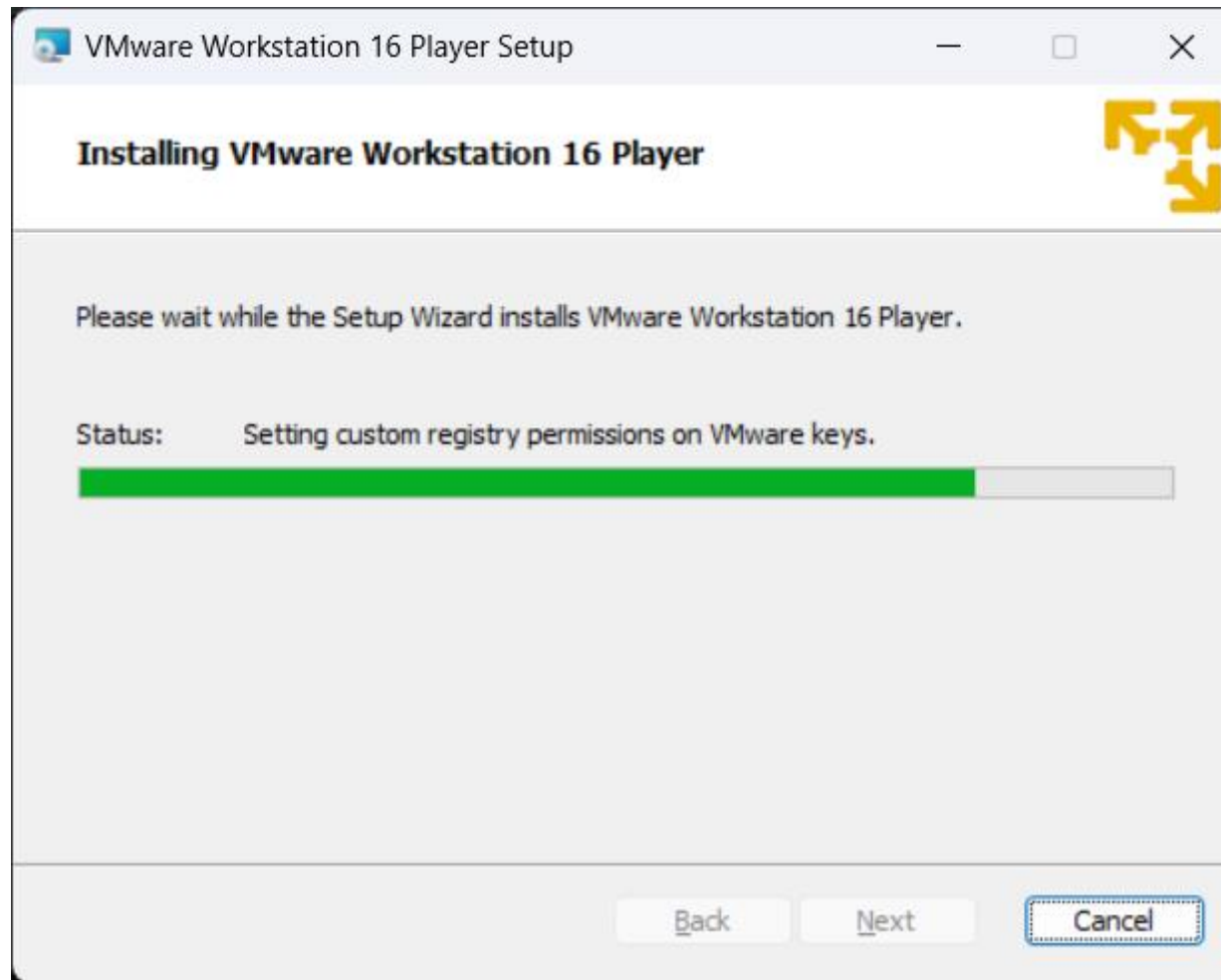
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



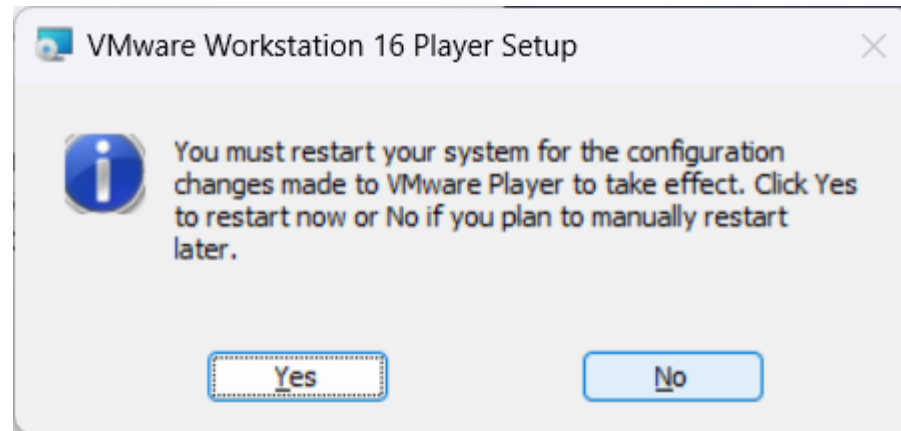
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



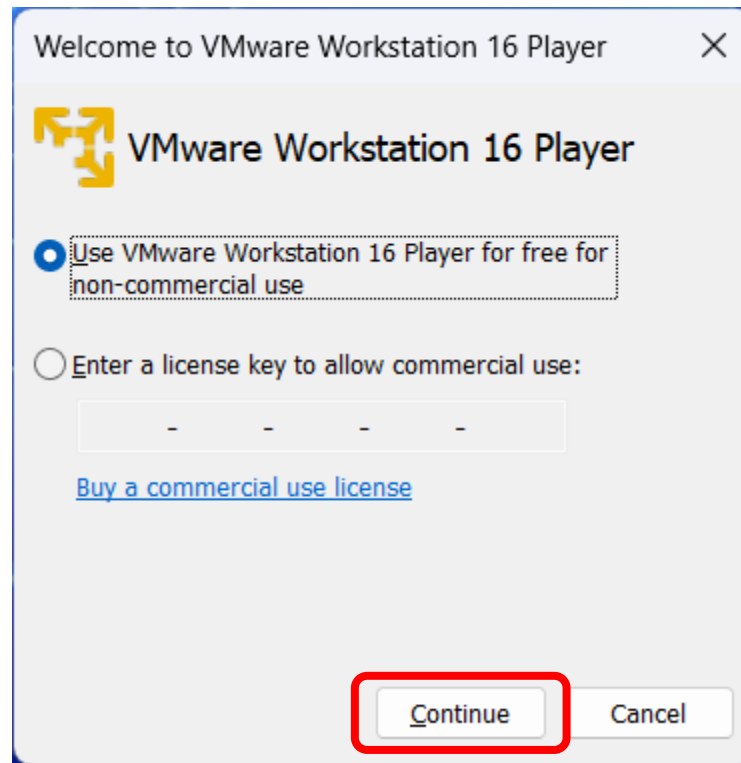
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



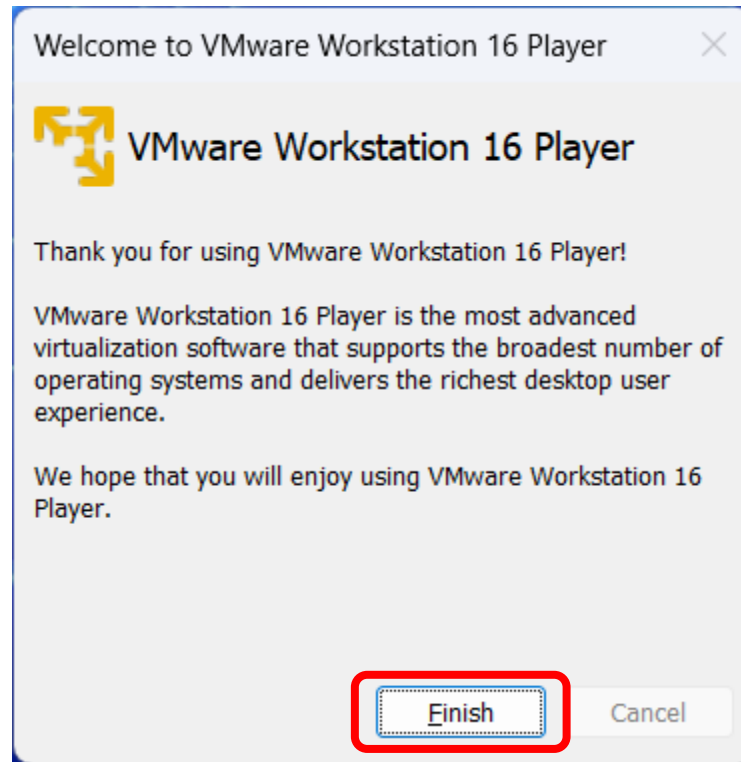
# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



# VMware Workstation Player

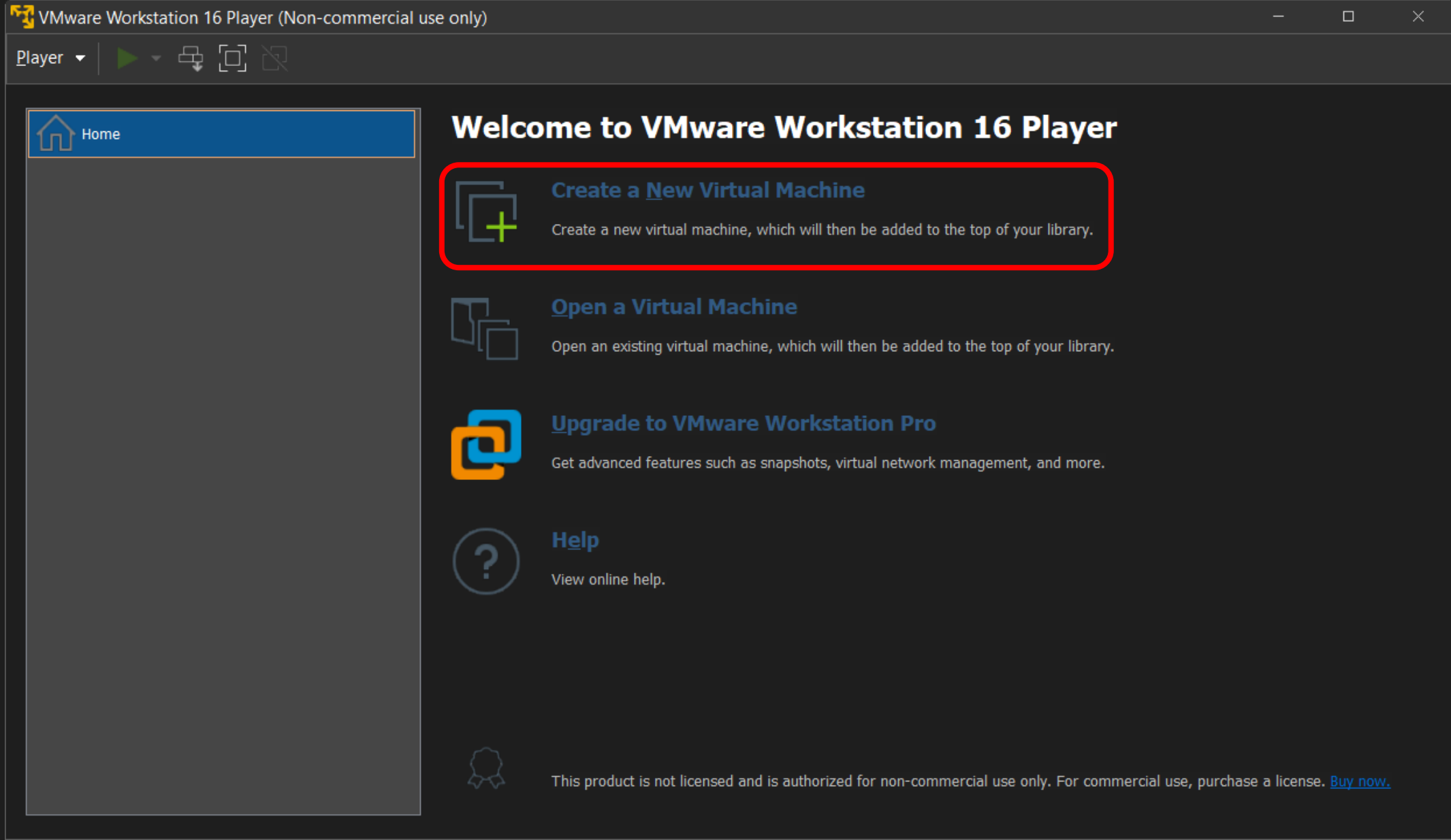
<https://www.vmware.com/products/workstation-player.html>





# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>

New Virtual Machine Wizard

**Welcome to the New Virtual Machine Wizard**  
A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?

Install from:


☐ Installer disc:

No drives available

☒ Installer disc image file (iso):

D:\Downloads\ubuntu-22.04-desktop-amd64.iso

Browse...

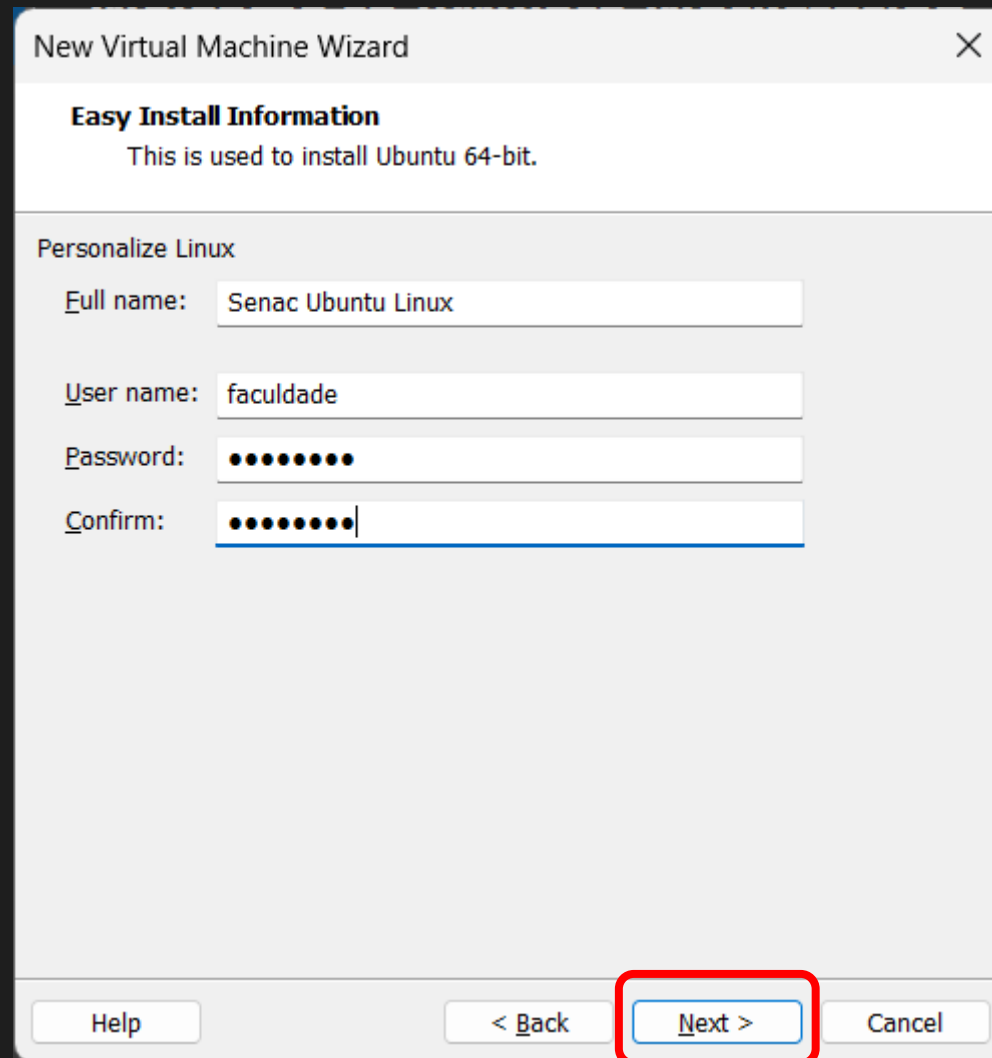
 Ubuntu 64-bit 22.04 detected.  
This operating system will use Easy Install. [\(What's this?\)](#)

☐ I will install the operating system later.  
The virtual machine will be created with a blank hard disk.

Help < Back **Next >** Cancel

# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



The image shows a 'New Virtual Machine Wizard' dialog box with a close button (X) in the top right corner. The title bar reads 'New Virtual Machine Wizard'. Below the title bar, the section 'Easy Install Information' is displayed, with the text 'This is used to install Ubuntu 64-bit.' Below this, the 'Personalize Linux' section contains four input fields: 'Full name:' with the value 'Senac Ubuntu Linux', 'User name:' with the value 'faculdade', 'Password:' with masked characters '••••••••', and 'Confirm:' with masked characters '••••••••'. At the bottom of the dialog, there are four buttons: 'Help', '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangular border.

New Virtual Machine Wizard

**Easy Install Information**  
This is used to install Ubuntu 64-bit.

Personalize Linux

Full name: Senac Ubuntu Linux

User name: faculdade

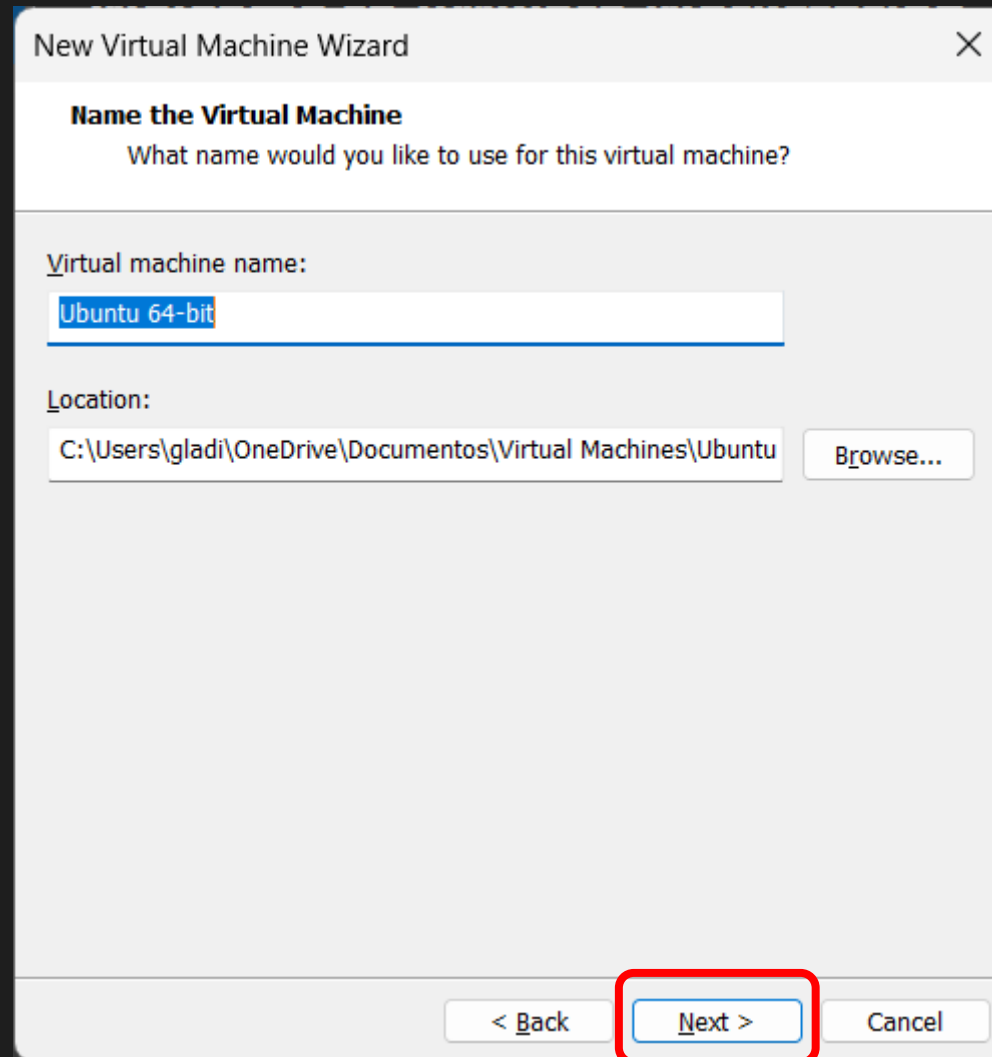
Password: ••••••••

Confirm: ••••••••

Help < Back Next > Cancel

# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>



The image shows a 'New Virtual Machine Wizard' dialog box. The title bar says 'New Virtual Machine Wizard' with a close button. The main heading is 'Name the Virtual Machine' with a subtitle 'What name would you like to use for this virtual machine?'. There are two input fields: 'Virtual machine name:' with the text 'Ubuntu 64-bit' and 'Location:' with the text 'C:\Users\gladi\OneDrive\Documentos\Virtual Machines\Ubuntu'. A 'Browse...' button is next to the location field. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangle.

New Virtual Machine Wizard

**Name the Virtual Machine**  
What name would you like to use for this virtual machine?

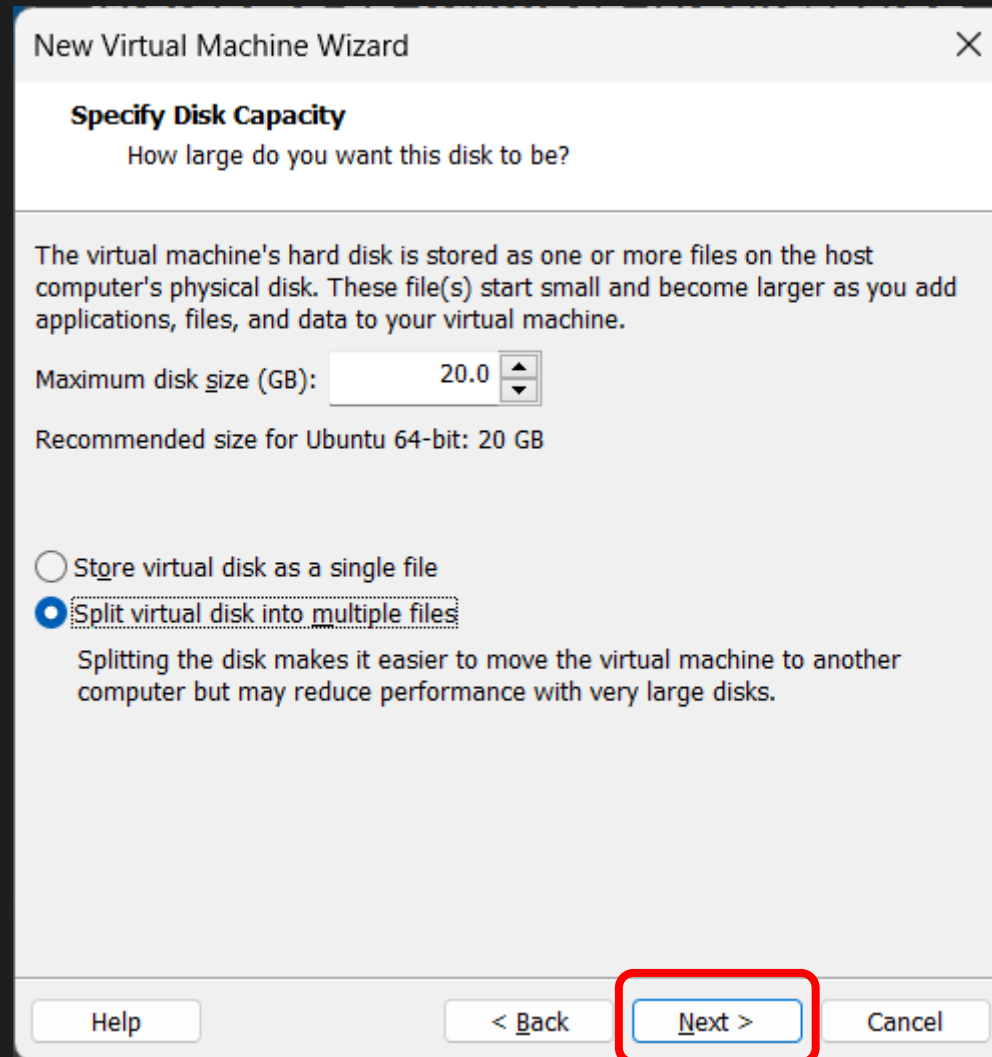
Virtual machine name:  
Ubuntu 64-bit

Location:  
C:\Users\gladi\OneDrive\Documentos\Virtual Machines\Ubuntu Browse...

< Back Next > Cancel

# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>

A screenshot of the 'New Virtual Machine Wizard' dialog box in VMware Workstation Player. The window has a title bar with the text 'New Virtual Machine Wizard' and a close button (X) on the right. The main content area is titled 'Specify Disk Capacity' with the subtitle 'How large do you want this disk to be?'. Below this, there is a paragraph explaining that the virtual machine's hard disk is stored as one or more files on the host computer's physical disk. A text input field for 'Maximum disk size (GB):' is set to '20.0'. Below the input field, it says 'Recommended size for Ubuntu 64-bit: 20 GB'. There are two radio button options: 'Store virtual disk as a single file' (unselected) and 'Split virtual disk into multiple files' (selected). Below the selected option, there is a paragraph explaining that splitting the disk makes it easier to move the virtual machine but may reduce performance with very large disks. At the bottom of the dialog, there are four buttons: 'Help', '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangular border.

New Virtual Machine Wizard

**Specify Disk Capacity**  
How large do you want this disk to be?

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

Maximum disk size (GB):

Recommended size for Ubuntu 64-bit: 20 GB

☐ Store virtual disk as a single file

☒ Split virtual disk into multiple files

Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

Help < Back **Next >** Cancel

# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>

New Virtual Machine Wizard

**Ready to Create Virtual Machine**  
Click Finish to create the virtual machine and start installing Ubuntu 64-bit and then VMware Tools.

The virtual machine will be created with the following settings:

Name:	Ubuntu 64-bit
Location:	C:\Users\gladi\OneDrive\Documentos\Virtual Machines\...
Version:	Workstation 16.2.x
Operating System:	Ubuntu 64-bit
Hard Disk:	20 GB, Split
Memory:	4096 MB
Network Adapter:	NAT
Other Devices:	2 CPU cores, CD/DVD, USB Controller, Printer, Sound C...

[Customize Hardware...](#)

☐ Power on this virtual machine after creation

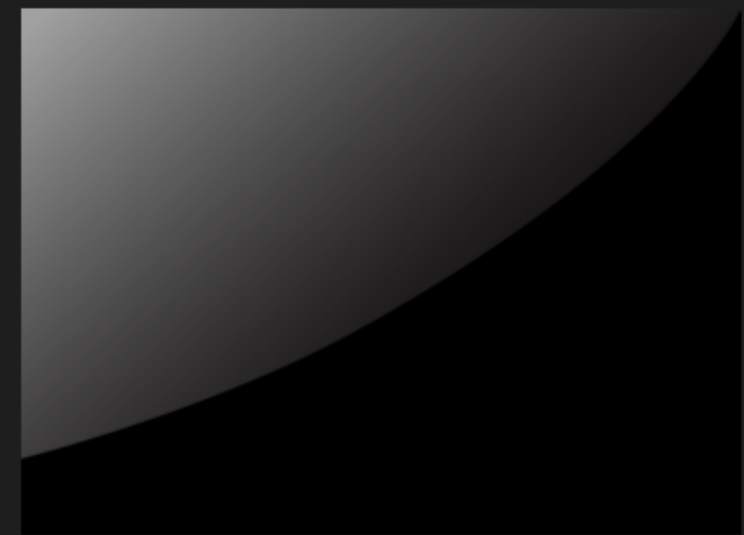
< Back Finish Cancel



Home



Ubuntu 64-bit



**Virtual Machine Name:**

**Ubuntu 64-bit**

**State:** Powered Off

**OS:** Ubuntu 64-bit

**Version:** Workstation 16.2.x virtual machine

**RAM:** 4 GB



Play virtual machine

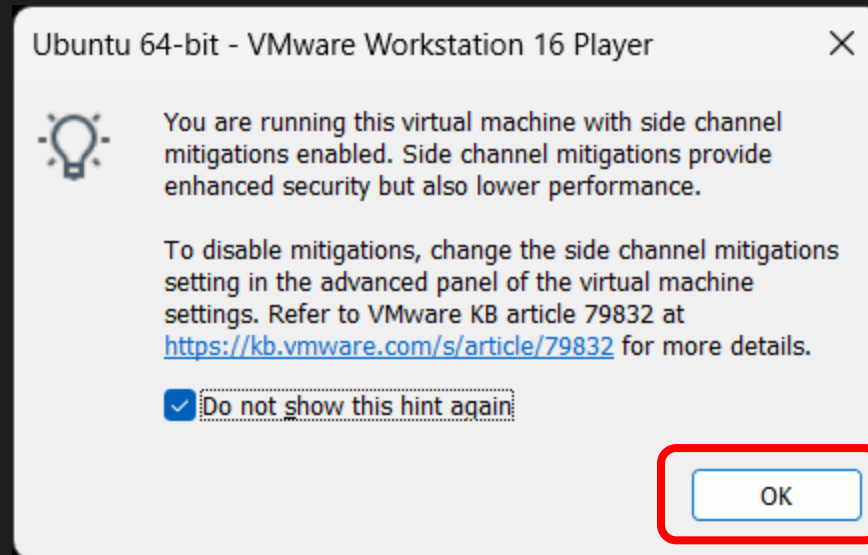


Edit virtual machine settings



# VMware Workstation Player

<https://www.vmware.com/products/workstation-player.html>





## Install



## Keyboard layout

Choose your keyboard layout:

English (Australian)  
English (Cameroon)  
English (Ghana)  
English (Nigeria)  
English (South Africa)  
English (UK)  
**English (US)**  
Esperanto  
Estonian  
Faroese  
Filipino  
Finnish  
French  
French (Canada)

**English (US)**

English (US) - Cherokee  
English (US) - English (Colemak)  
English (US) - English (Colemak-DH ISO)  
English (US) - English (Colemak-DH)  
English (US) - English (Dvorak)  
English (US) - English (Dvorak, alt. intl.)  
English (US) - English (Dvorak, intl., with dead keys)  
English (US) - English (Dvorak, left-handed)  
English (US) - English (Dvorak, right-handed)  
English (US) - English (Macintosh)  
English (US) - English (Norman)  
English (US) - English (US, Symbolic)  
English (US) - English (US, alt. intl.)

Type here to test your keyboard

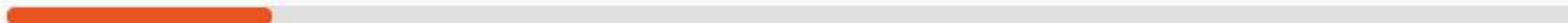
Detect Keyboard Layout

Quit

Back

Continue

> Verifying the installation configuration...



## Install



## Updates and other software

**What apps would you like to install to start with?**

Normal installation

Web browser, utilities, office software, games, and media players.



Minimal installation

Web browser and basic utilities.

**Other options**

Download updates while installing Ubuntu

This saves time after installation.



Install third-party software for graphics and Wi-Fi hardware and additional media formats

This software is subject to license terms included with its documentation. Some is proprietary.

Quit

Back

Continue

&gt; Verifying the installation configuration...



## Install



## Installation type

This computer currently has no detected operating systems. What would you like to do?

☒ Erase disk and install Ubuntu

**Warning:** This will delete all your programs, documents, photos, music, and any other files in all operating systems.

Advanced features...

None selected

☐ Something else

You can create or resize partitions yourself, or choose multiple partitions for Ubuntu.

Quit

Back

Install Now

> Verifying the installation configuration...

## Install

## Installation type

This computer currently has no detected operating systems. What would you like to do?

☒ Erase disk and install Ubuntu

**Warning:** This will delete all your programs, documents, photos, music, and any other files in all operating systems.

Advanced Features...

None selected

## Write the changes to disks?



If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.

The partition tables of the following devices are changed:  
SCSI33 (0,0,0) (sda)

The following partitions are going to be formatted:  
partition #2 of SCSI33 (0,0,0) (sda) as ESP  
partition #3 of SCSI33 (0,0,0) (sda) as ext4

Go Back

Continue

Back

Install Now

> Verifying the installation configuration...



## Install

Where are you?



Sao Paulo

Back

Continue

› Creating ext4 file system for / in partition #3 of SCSI33 (0,0,0) (sda)...



## Install

## Have fun with your photos

Shotwell is a handy photo manager that is ready for your gadgets. Connect a camera or a phone to transfer your photos, then it's easy to share them and keep them safe. And if you're feeling creative, you can find many other photo apps in Ubuntu Software.

## Included software



Shotwell Photo Manager

## Supported software



GIMP Image Editor



Shotcut Video Editor



&gt; Loading module 'usb-storage' for 'USB storage'...



### Installation Complete



Installation is complete. You need to restart the computer in order to use the new installation.

Restart Now

# VMware Player

Ubuntu 64-bit - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ |  ▾ |  | 

 |  | 

Apr 7 19:33

 ▾ |  |  |  ▾



gladimir

Not listed?

ubuntu<sup>®</sup>



Home





Senac-RS

Senac

Fecomércio Sesc

Rio Grande do Sul

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Cursos

Serviços

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OK!

# VirtualBox

<https://www.virtualbox.org/wiki/Downloads>



## VirtualBox

### Download VirtualBox

search...  
[Login](#) [Preferences](#)

Here you will find links to VirtualBox binaries and its source code.

#### VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

If you're looking for the latest VirtualBox 6.0 packages, see [VirtualBox 6.0 builds](#). Please also use version 6.0 if you need to run VMs with software virtualization, as this has been discontinued in 6.1. Version 6.0 will remain supported until July 2020.

If you're looking for the latest VirtualBox 5.2 packages, see [VirtualBox 5.2 builds](#). Please also use version 5.2 if you still need support for 32-bit hosts, as this has been discontinued in 6.0. Version 5.2 will remain supported until July 2020.

#### VirtualBox 6.1.34 platform packages

- [Windows hosts](#)
- [OS X hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)
- [Solaris 11 IPS hosts](#)

The binaries are released under the terms of the GPL version 2.

See the [changelog](#) for what has changed.

You might want to compare the checksums to verify the integrity of downloaded packages. *The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!*

- [SHA256 checksums](#), [MD5 checksums](#)

**Note:** After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

#### VirtualBox 6.1.34 Oracle VM VirtualBox Extension Pack

- [All supported platforms](#)

Support for USB 2.0 and USB 3.0 devices, VirtualBox RDP, disk encryption, NVMe and PXE boot for Intel cards. See [this chapter from the User Manual](#) for an introduction to this Extension Pack. The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#). *Please install the same version extension pack as your installed version of VirtualBox.*

#### VirtualBox 6.1.34 Software Developer Kit (SDK)

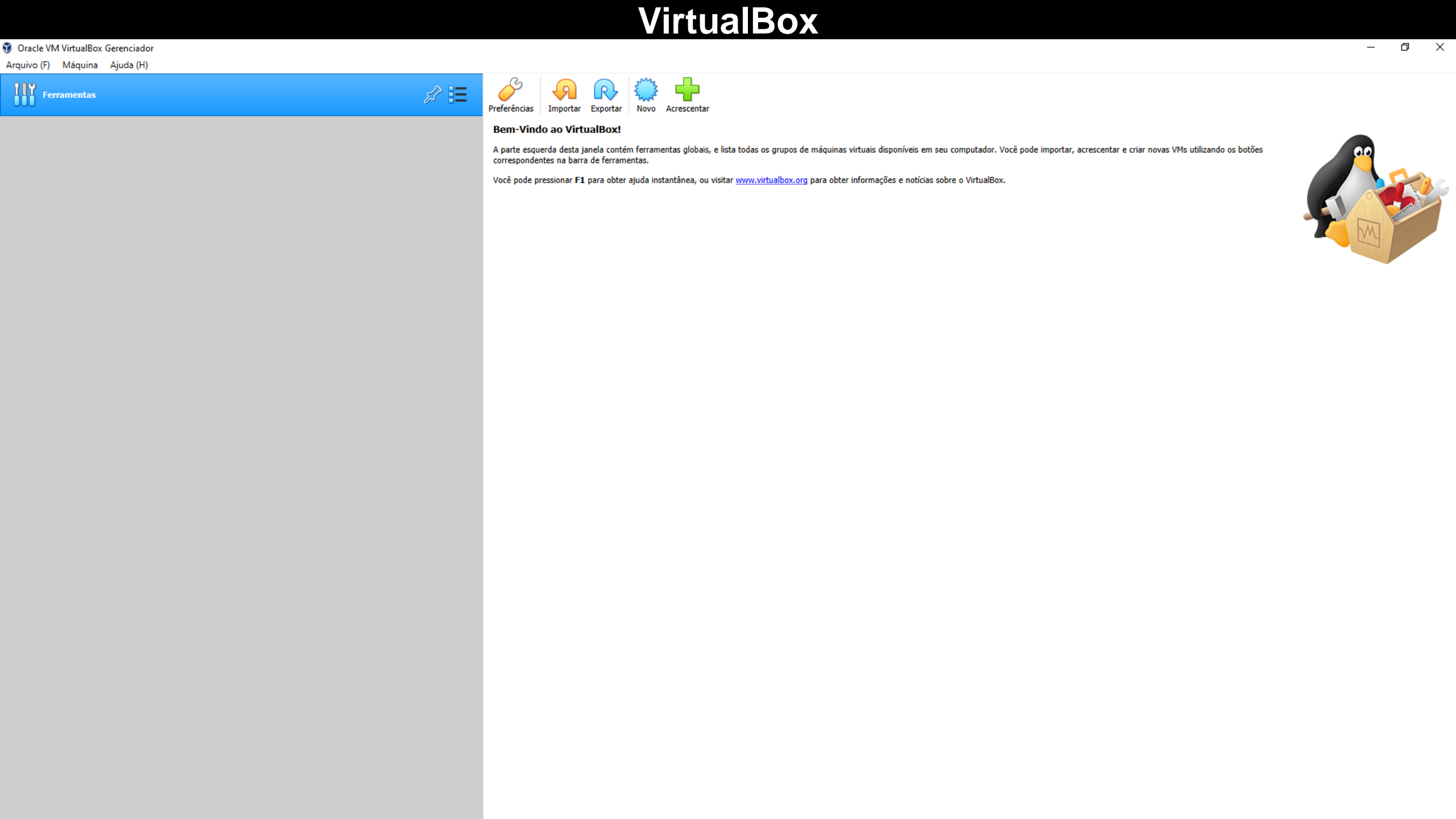
- [All platforms](#)

#### User Manual

The VirtualBox User Manual is included in the VirtualBox packages above. If, however, you would like to take a look at it without having to install the whole thing, you also access it here:

- [User Manual \(HTML version\)](#)

[About](#)  
[Screenshots](#)  
[Downloads](#)  
[Documentation](#)  
    [End-user docs](#)  
    [Technical docs](#)  
[Contribute](#)  
[Community](#)



# VirtualBox

Oracle VM VirtualBox Gerenciador

Arquivo (F) Máquina Ajuda (H)



Ferramentas



Preferências



Importar



Exportar



Novo



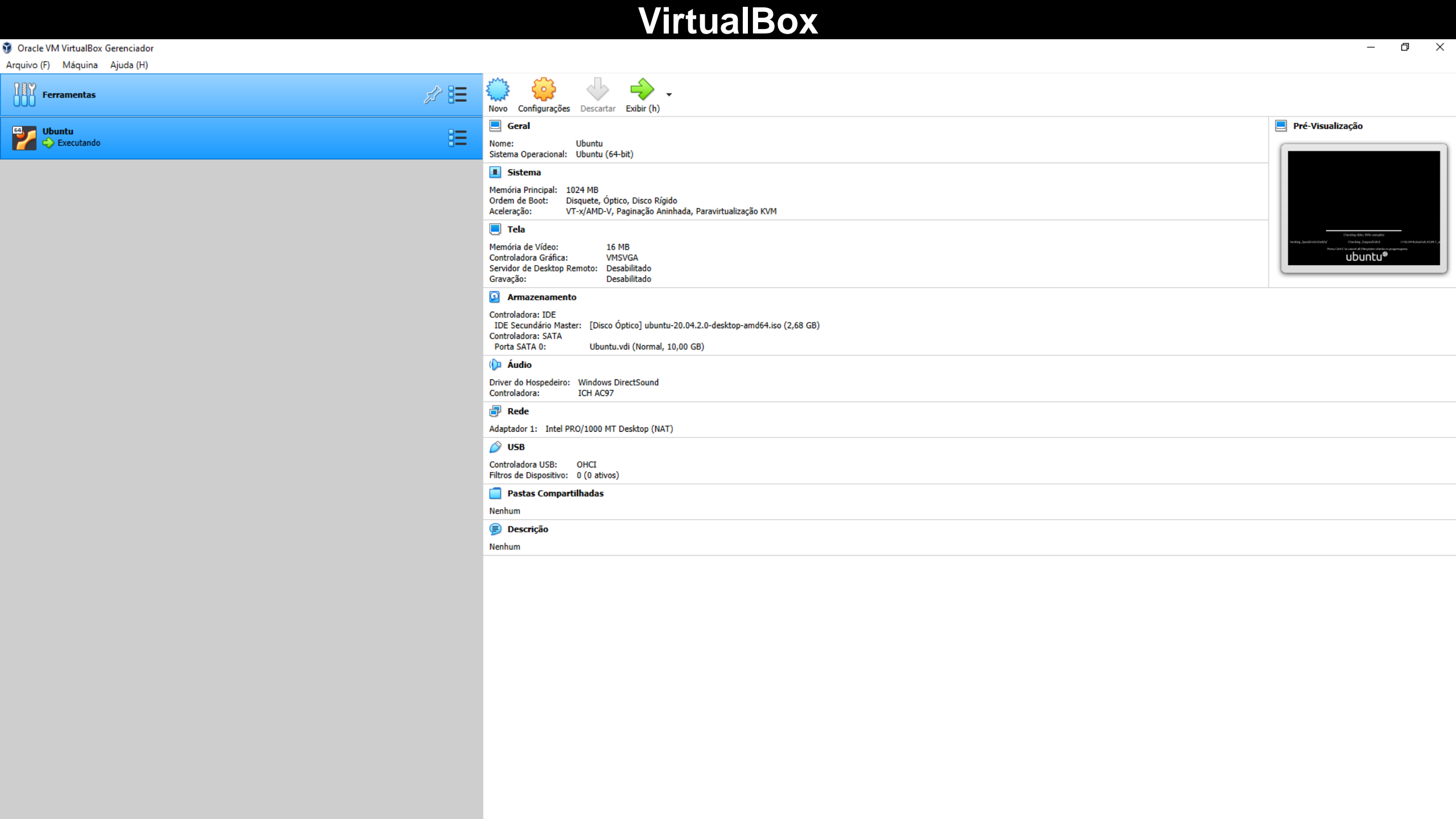
Acrescentar

## Bem-Vindo ao VirtualBox!

A parte esquerda desta janela contém ferramentas globais, e lista todas os grupos de máquinas virtuais disponíveis em seu computador. Você pode importar, acrescentar e criar novas VMs utilizando os botões correspondentes na barra de ferramentas.

Você pode pressionar **F1** para obter ajuda instantânea, ou visitar [www.virtualbox.org](http://www.virtualbox.org) para obter informações e notícias sobre o VirtualBox.







# VirtualBox

Ubuntu [Executando] - Oracle VM VirtualBox

Arquivo Máquina Visualizar Entrada Dispositivos Ajuda

Você tem a opção **Auto-capturar teclado** ligada. Isto fará com que a Máquina Virtual automaticamente **capture** o teclado todas as vezes em que a janela da MV seja ativada, tornando-o indisponível para outras aplicações que estejam rodando em seu computador hospedeiro: quando o teclado é capturado, todas as teclas (incluindo teclas de sistema como Alt-Tab) serão

A Máquina Virtual informa que o sistema operacional convidado suporta o recurso de **integração de ponteiro de mouse**. Isto significa que você não precisa *capturar* o ponteiro do mouse para poder usá-lo em seu sistema operacional convidado -- todas as ações de mouse que você executar quando o ponteiro estiver em cima da janela da Máquina Virtual serão enviadas

Apr 8 02:34

Instalação

## Bem-vindo

Lietuviškai

Magyar

Nederlands

No localization (UTF-8)

Norsk bokmål

Norsk nynorsk

Polski

Português

**Português do Brasil**

Română

Sámegiellii

Shqip

Slovenčina


Slovenščina

Ślůnski


Suomi

Svenska

Tagalog



Experimentar o Ubuntu



Instalar o Ubuntu

Você pode experimentar o Ubuntu sem fazer quaisquer alterações em seu computador, diretamente a partir deste CD.

Ou se você estiver pronto, pode instalar o Ubuntu ao lado (ou no lugar) do seu sistema operacional atual. Isso não levará muito tempo.

Você talvez queira ler as [notas da versão](#).



## Download Ubuntu Desktop

The open-source desktop operating system that powers millions of PCs and laptops around the world. Find out more about Ubuntu's features and how we support developers and organisations below.

[Ubuntu Desktop homepage](#)

[Visit the Ubuntu Desktop blog >](#)

## Ubuntu 22.04 LTS

Download the latest LTS version of Ubuntu, for desktop PCs and laptops. LTS stands for long-term support — which means five years, until April 2027, of free security and

Download



# Mão na massa

Te atraca, vivente!

# Planilha - Grupos

<https://abre.ai/unisenac-so>

	A	B	C	D	E	G	H	I
1	Ordem	TURNO	Nome do GRUPO (nome de guerra)	SISTEMAS OPERACIONAIS Pesquisados	INTEGRANTE(s)			
2	1	M	OSMAR - OS MARvado da Facul	Puppy, Mint, Debian	Gladi MIRC	Rei Décio	Ange Loni	Duda Monks
3	2	M						
4	3	M						
5	4	M						
6	5	M						
7	6	M						
8	7	M						
9	8	M						
10	9	M						
11	10	M						
12	11	M						
13	12	M						
14	13	M						
15	14	M						
16	15	M						
17	16	M						
18	17	M						
19	18	M						